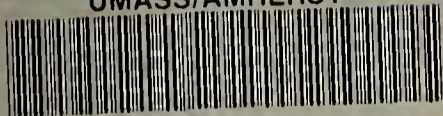


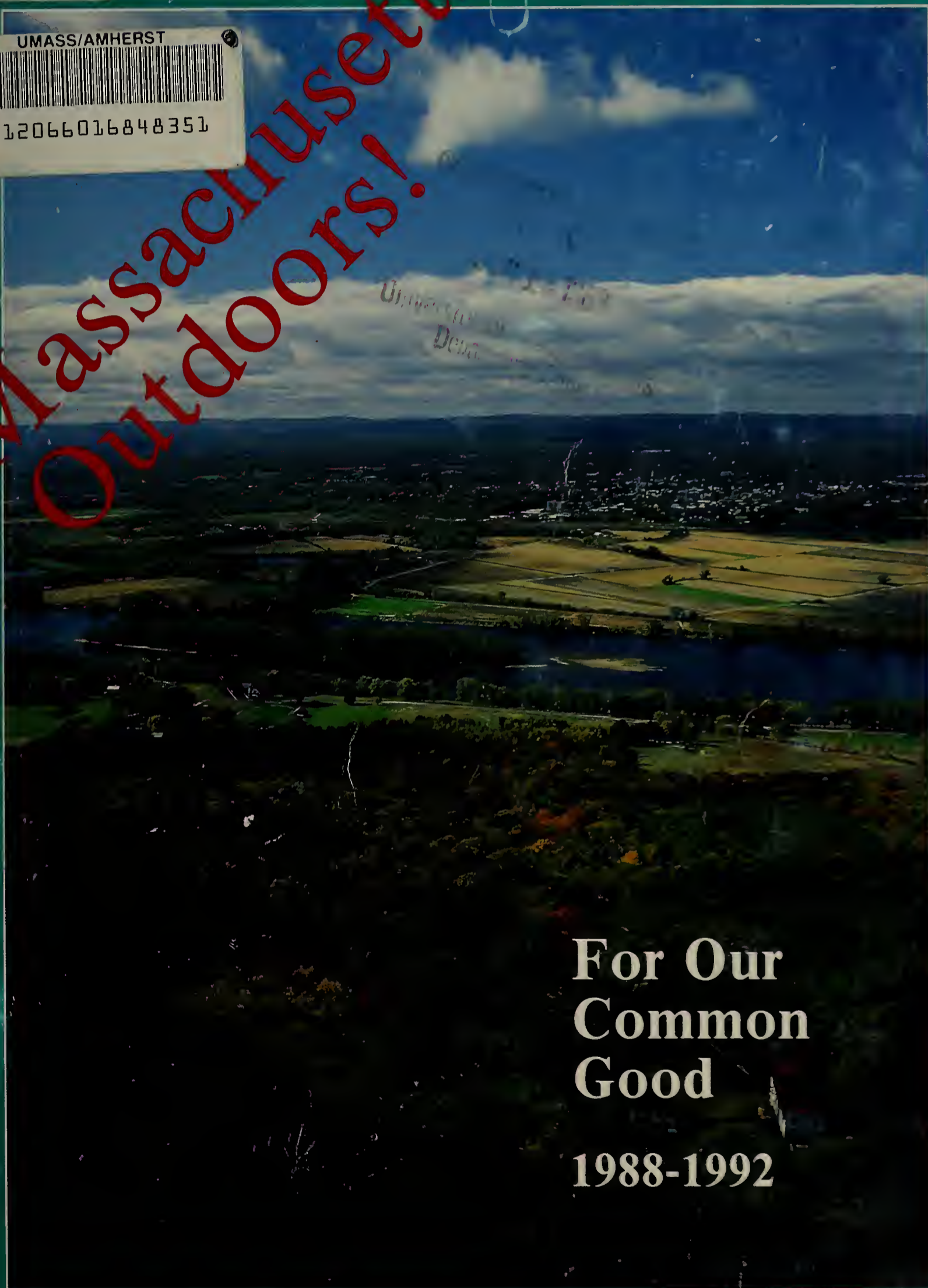
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Massachusetts
Outdoors!



For Our
Common
Good

1988-1992

*Cover Design by Lauren G. Meier
Office of Cultural and Historic Landscapes*

*Skinner State Park, Holyoke Range
Photo by Susan Wilson*



For Our Common Good

Open Space and Outdoor Recreation in Massachusetts

Volume One

**A Comprehensive Analysis and Plan for Preserving Our
Natural and Cultural Heritage and Providing Recreation
Opportunities While Expanding Tomorrow's Economic Horizons**

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Commonwealth of Massachusetts**

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THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE DEPARTMENT

STATE HOUSE • BOSTON 02133

MICHAEL S. DUKAKIS
GOVERNOR



December 1, 1988

Dear Massachusetts Citizens,

This comprehensive document is the result of an ambitious research project on open space and outdoor recreation which was undertaken by the Executive Office of Environmental Affairs and an advisory committee of dedicated women and men from around the state. It is with pride that I present to you, the citizens of this Commonwealth, the 1988-92 Statewide Comprehensive Outdoor Recreation Plan, our newest plan of action for the protection and enhancement of our natural and cultural resources.

The people of Massachusetts have always been proud of their diverse cultural traditions and shared heritage, dating to the founding of the Bay Colony in 1630. A major part of that heritage, and of that pride, has been our state's natural beauty and rich diversity of landscape. It was in keeping with this tradition that in 1987 our legislature passed a historic \$500 million open space bond. And it is in keeping with these sentiments that the Department of Environmental Management, under the guidance of the Executive Office of Environmental Affairs, set out to answer four vital questions:

- How many recreation and conservation areas are available in Massachusetts?
- What do the people of the Commonwealth like to do in their leisure time?
- What major problems do local leaders face in protecting our resources and providing recreation opportunities?
- What problems do managers of state-owned properties and facilities encounter?

This, the 1988 Statewide Comprehensive Outdoor Recreation Plan, is yours to draw from and build upon as we work to shape the future of the Commonwealth, developing and expanding the vision . . . For Our Common Good.

Sincerely,

Michael S. Dukakis
Governor



Executive Summary

The 1988-92 Statewide Comprehensive Outdoor Recreation Plan, **For Our Common Good**, is now in your hands. After 18 months of the most extensive research and public participation effort ever undertaken by the Executive Office of Environmental Affairs (EOEA), this long-awaited, two-volume document presents state and local officials with an overview of the issues involved in planning for the protection and enhancement of our natural and cultural resources.

To identify current issues facing Bay State environmental and recreation planners, EOEA agencies worked with a technical advisory committee and the University of Massachusetts at Amherst, to develop a comprehensive research program. The result is the largest data base ever collected for the purpose of analyzing open space and outdoor recreation concerns in Massachusetts. This data base includes (1) an inventory of nearly 11,000 federal, state, and local properties and facilities, (2) the interests and concerns of over 3,500 Massachusetts residents, including an oversampling of 600 minority residents and 150 people with disabilities, (3) the major open space and recreation issues and concerns of city and town officials and (4) the professional judgment of nearly 200 state facility and property managers regarding critical management and operations concerns.

The information contained in this data base, combined with insights gained from the individuals who attended any of 13 regional public and professional meetings, was the basis for identifying six issues of major concern and providing a focus for this report. Volume One of this statewide plan focuses on many areas of concern, including statistical information and recommendations for action. Volume Two contains the statewide action plan that addresses the concerns identified in Volume One and presents a variety of planning tools to assist state and local officials in their planning efforts.

Priority Issues

Municipalities: The role of municipalities in statewide planning for the protection and enhancement of outdoor recreation and conservation resources must be fully understood.

Fully 66 percent of the nearly 11,000 inventoried properties and facilities are municipally owned and operated. It is clear that to accomplish statewide goals for the protection of open space and the provision of recreation opportunities, the partnership between state and local

governments must be nourished. To sustain and further enhance these relationships this report calls for:

- state and local support for and further cooperation with regional planning agencies to protect natural, cultural and recreational resources;
- state support for local efforts to work with private developers to plan for environmentally sound development and the provision of open space and recreational amenities;
- increased municipal involvement in creating and maintaining the state Geographic Information System;
- state support for local efforts to meet the needs of people in urban centers, with particular emphasis on minorities and people with disabilities; and
- the creation of a statewide technical assistance program to aid in the development of municipal programs thereby strengthening partnerships between state and local officials.

Management and Operation of State Properties and Facilities: Management and operational factors in need of immediate attention must be identified and acted upon if the Commonwealth is to continue its leadership role in the area of environmental protection.

Responsibility for the management and operation of more than 750 properties and facilities on thousands of acres of land is a formidable task. Those responsible for the day-to-day operations of our state facilities have developed an organized and well managed system. However, facility managers expressed concern about their ability to continue in such good standing. A full 74 percent and 63 percent, respectively, were concerned about maintenance factors related to staffing and equipment. Other concerns focused on staffing for programs and services, access for people with disabilities, seasonal hiring practices, and staff training and development. To address the wide variety of issues and concerns faced by our state property and facility managers, this report calls for:

- agency meetings and in-service training sessions to identify area-specific problems and provide the resources necessary to assist managers in solving these problems;
- local park and recreation professionals to share current knowledge and techniques for developing efficient and effective maintenance programs.

Clean and Usable Water: The protection and delivery of safe water must continue to remain a high priority now and in the foreseeable future.

A common thread running throughout this report is the expressed concern of state and local officials for the quality and quantity of the Commonwealth's water resources.

Specific concerns vary, but are mainly related to the drinking water supply and the provision of recreation opportunities such as swimming and boating. Public officials are not alone in their quest to find solutions. Massachusetts citizens, facing newspaper headlines which describe polluted ocean beaches, acid rain and many other water related issues, are expressing their concern as well.

Although there is tremendous awareness related to the need for protecting and enhancing water resources, many areas of the state have been unable to adequately address these problems. Survey results indicate that rural communities and high growth rate communities in particular have been unable to effectively cope with water supply issues and are looking to the state for assistance.

To further strengthen state efforts to protect the water supply and to provide support and assistance to local communities this report calls for:

- state environmental agencies to work cooperatively with regional planning agencies and local governments to develop regional strategies for the protection and conservation of water resources and the provision of water-related recreational opportunities;
- increased environmental law enforcement related to the protection of water resources and boating safety;
- EOEA to seek additional funding to expand all water-related agency programs as well as grants to municipalities for water related projects;
- EOEA to evaluate the effectiveness of protective orders on rivers and strengthen protective techniques ;
- agencies to increase efforts to enhance properties and facilities that support the most popular recreation activities in the state, including swimming, boating and other water-related activities; and
- increased efforts to provide recreation opportunities in coastal areas.

Public Education and Information: Efforts must be strengthened in the areas of environmental education and public information.

Recently, the Executive Office of Environmental Affairs, in cooperation with the state Board of Education, increased efforts to promote environmental education throughout the Commonwealth. This effort will coordinate all five EOEA agencies' educational programs and promote their use among teachers and other education professionals. In addition to this effort, the 1988 SCORP report calls for:

- EOEA to explore the feasibility of establishing a Division or Office of Environmental Education and Information to develop and promote a statewide environmental education program;

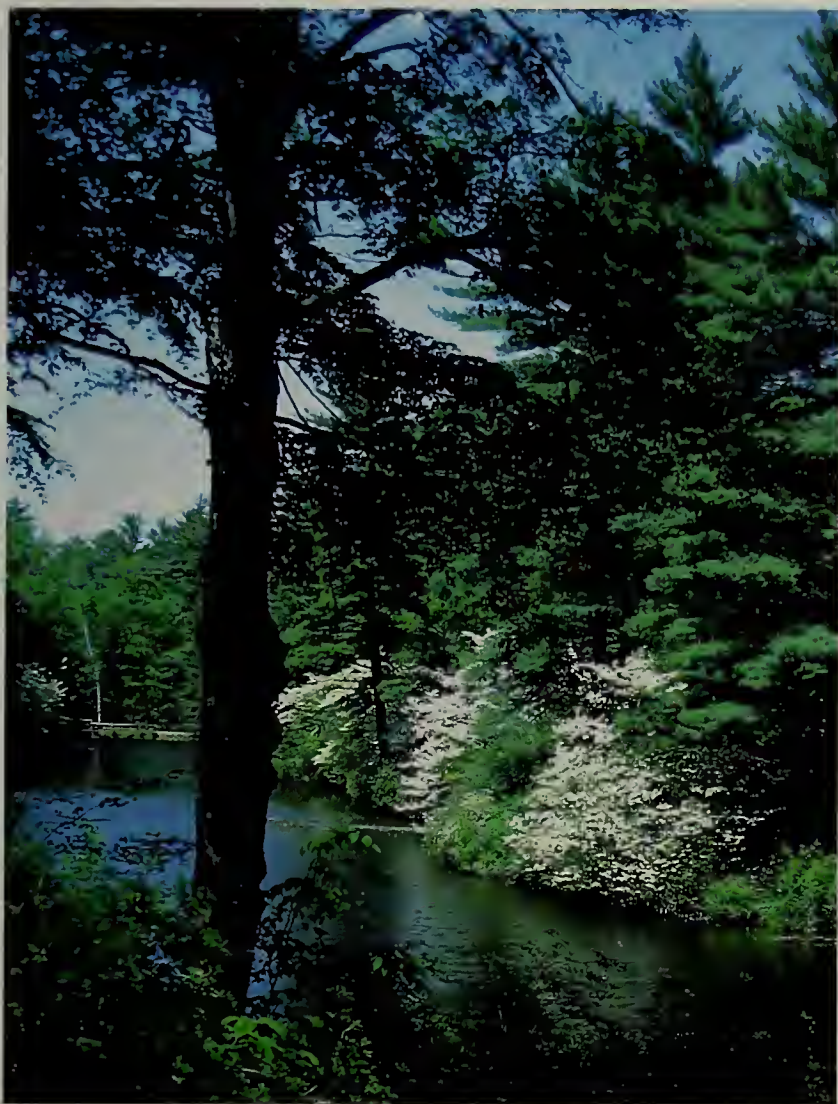


Photo by Lauren Meier

- EOEa to continue the dialogue with the State Board of Education to develop strategies for enhancing in-school environmental education programs and for involving students in state agency programs;
- agencies to support nonprofit environmental education programs through cosponsorship and joint ventures; and
- environmental agencies to evaluate the interpretive needs of each new acquisition to ensure that exhibits, wayside exhibits and publications enhance and support the public education message of the site.

Public Awareness and Involvement: Every effort must be taken to actively involve Massachusetts citizens in programs that are designed to plan for, protect and properly utilize the many cultural, natural and recreational resources that exist throughout the state.

As indicated in the public demand survey nearly one-third of all Massachusetts residents are either unaware of or dissatisfied with state provided opportunities for recreation. In addition, public information directors for state agencies placed a high priority on increasing the public's awareness and involvement in our efforts to optimize our outdoor recreation and conservation resources. Although there have been many efforts to reach out to the public and encourage citizen involvement, this report calls for:

- the legislature to fund the production of a high-quality, quarterly environmental magazine that continually keeps before us the mandates of the offices and agencies of EOEa;
- environmental agencies to develop park ethics programs to promote the positive use of parks and respect for the environment similar to those advocated for municipalities (these programs are to promote a sense of ownership among park users and provide the user an opportunity to get involved in protecting and enhancing the resources); and
- environmental agencies to develop promotional strategies among minority populations to encourage the use of state properties and facilities and increase efforts to hire minority program and facility managers.

Stable Funding Source: There is a critical need to identify and develop, at both the federal and state level, a stable source of funding.

Since the last SCORP was produced in 1983, priorities for the Commonwealth have changed very little. A more accurate appraisal would be that these priorities have become clearer and the needs intensified. The survey results presented in this 1988 Open Space and Outdoor Recreation Plan show areas of common concern that have been consistent over the years. Since the last SCORP many valuable programs have been created at both the state and local level which have solidified a comprehensive approach to resource protection and enhancement. To facilitate the continuation of current programs and projects supported by capital bond issues, the state must evaluate program effectiveness and long-range goals. In concert with the findings of this phase of the evaluation, this report calls for:

- the legislature to consider the establishment of an ongoing, consistent source of funding for land acquisition, facility development and rehabilitation for the protection and enhancement of natural, cultural and recreational resources;
- the Executive Office of Environmental Affairs to work with the agencies to seek an increase in the annual budget for adequate staff, equipment, public information programs and program and facility improvements for people with disabilities; and
- the legislature to consider grant programs for cities and towns for projects related to the protection of water resources, the acquisition of land for conservation and recreation programs, and for making programs and facilities accessible to people with disabilities.

Table of Contents

Executive Summary	i
Chapter One The Vision, the Purpose	1
Introduction	3
Purpose of the Document	4
The Vision	4
The Way We Did the Things We Did	6
Implementing the Process	9
We've Only Just Begun	10
Chapter Two Years of Accomplishment	11
Responding to the Challenge	13
Progress by Agencies and the Legislature	13
Other State Agencies	18
Reach Out and Touch: Communication and Information	20
Chapter Three Managing Our Resources	23
(A Survey Of State Property Managers)	
Looking Backward . . . Looking Ahead	25
Developing the Property and Facility Managers' Survey	26
Survey Results and Discussion	26
Management and Operations Recommendations	30
Summary of Major Areas of Concern	32
Public Education and Information: Knowledge to the People	32
Coordinating and Providing Technical Assistance	34
Chapter Four Our Cities and Towns	35
(A Survey of Municipal Officials)	
Past as Prologue	37
The Municipal Challenge	38
Municipal Survey Results	39
Summary and Discussion	46
State Agency Involvement in Water Protection	47
Chapter Five Over a Million Acres	49
(An Inventory of Statewide Resources)	
Identifying Our Resources	51
The Massachusetts Tally	52
The Next Steps	66

Chapter Six	We the People	67
	(A Survey of Massachusetts Residents)	
	Listening to the People	
	Method	69
	Survey Results	69
	Priorities for Action	70
	From Supply and Demand to Analysis	80
		82
Chapter Seven	Looking Toward the Future	83
	(An Analysis of Survey Results)	
	What We Have, What We Need	85
	How Issues are United	85
	Findings and Recommendations	88
	Statewide	88
	The Berkshires	92
	Connecticut Valley	94
	Central Massachusetts	96
	Northeastern Massachusetts	98
	Metropolitan District Commission	100
	Southeastern Massachusetts	102
	Cape Cod and Islands	104
	Summary - - Coming to Closure	106
	Activating the Process	108
Chapter Eight	Just the Beginning	109
	(1988 Policies and Recommendations)	
	Coming Full Circle	111
	1988 Policies and Actions	111
	Affording Open Space and Outdoor Recreation	118
	Future Funding Recommendations	121
	The Final Steps - - Making it Happen	122
	Conclusion	122
Appendix	With Special Thanks!	123
Volume Two	1988-90 Action Plan and Workbook	
	(Printed under separate cover)	

The Vision, the Purpose

*Come my friends, 'tis not too late
to seek a better world.*

Alfred, Lord Tennyson
Ulysses (1842)



Introduction

In recent years, residents of the the Commonwealth of Massachusetts have been experiencing the benefits of a strong economy, but it was not always that way. Thirteen years ago, the Bay State was mired in its worst economic condition since the Great Depression. Today it is among the healthiest of America's major industrial states. Over the past dozen years, the Commonwealth has benefited from improved economic conditions that have enhanced the lives of most residents of the Commonwealth. Fast-paced economic growth and development, of course, have their drawbacks. Some of their worst excesses, uncontrolled sprawl, the loss of green space and spiraling land prices, make one ask, "Is this the way to enter the 21st century?"

The realization to which many have come is simple: a sound environment is not only appealing, it is essential. Economic progress, development and preservation of natural and cultural resources are not strange bedfellows -- they can be, and should be, the best of friends. This friendship, this partnership, can be the key to controlling the excesses of rapid growth. Yes, Massachusetts needs business and industry. Our success in enticing businesses and industries to "set up shop" and remain here depends largely on the state's healthy, well-maintained natural and cultural resources.

The Massachusetts legislature has sought to balance economic prosperity with the protection of natural and cultural resources. On December 9, 1987, with such environmental preservation in mind, Governor Michael S. Dukakis signed into law sweeping legislation authorizing \$500 million for various open space and recreation projects. This is the second major environmental bond issue since 1983. This bond is essential in providing a smooth transition as we enter the next century. It is the key to preserving our highly valued cultural and natural resources for present and future generations.

What was the source of this important legislation? Ultimately the legislature, of course, but also the people of the Commonwealth. The vision of the people is reflected in the government. But the people's vision is also obvious in other ways, such as in the actions of groups like the Massachusetts Audubon Society, The Trustees of Reservations and The Nature Conservancy; in local communities whose municipal governments have protected more than 300,000 acres over the years; and in the cooperative efforts of local businesses and private landowners to preserve agriculture and the environment. The people have spoken, the government has taken action, and now, we the people, must plan and develop priorities for actions that will take place over the next five years.

Purpose of the Document

This five-year plan, the 1988 Statewide Comprehensive Outdoor Recreation Plan (SCORP), establishes the Executive Office of Environmental Affairs' (EOEA) policy for managing its open space and outdoor recreation areas and for guiding the expenditure of funds authorized by the legislature. However, the issues covered and the recommendations for actions are relevant to all land-managing agencies and organizations and to all citizens interested in preserving the environment and enjoying the out-of-doors. A listing of 1988 policies and recommendations is presented in Chapter Eight. A five-agency action plan to address these recommendations is in Volume Two, the 1988 Action Plan and Workbook.

The 1988 SCORP is meant to develop a framework for ensuring the protection of highly valued cultural and natural resources and enhancing existing recreational opportunities in Massachusetts. Its success depends on the cooperation and commitment of government agencies and private organizations that own or manage land for public use.

The Vision

Preservation, Progress and Ethics

Economic progress and environmental preservation are often presumed to be mutually exclusive. This need not be the case. Sound environmental policies, for example, can create jobs within the public and private sectors. Expenditures by recreation participants in outdoor programs create revenues, as do taxes on the sale of recreational equipment and conservation related products. Economic benefits are also realized from the construction of facilities, the provision of maintenance services, purchases of building supplies, hardware, utilities, food and so forth.

Maintaining and preserving the environment can be costly. No one ever said that clean air, fresh water, good health, physical fitness, reduced stress levels, scenic landscapes and maintenance of the "New England

character" came cheaply. They require regular investments in land acquisition, land management, recreation facilities, maintenance and the provision of roads, utilities and equipment. But the benefits of a healthy environment, able to support an abundance of life, are critical.

The benefits, according to the Massachusetts Division of Tourism, have been phenomenal. In 1985 alone, 22.6 million tourists and travelers visited the Bay State, spending \$6.2 billion. Meanwhile, the travel industry itself generated \$719 million in federal, state and local taxes, and more than \$1.2 billion in salaries and wages.

Table 1.1

Direct Travel Revenues 1985 by County (in Thousands)

Suffolk	\$2,674,857	Bristol	\$147,309
Middlesex	875,233	Berkshire	101,940
Barnstable	632,492	Plymouth	89,323
Hampden	283,818	Nantucket	73,245
Essex	256,589	Dukes	40,612
Norfolk	211,650	Hampshire	38,879
Worcester	202,179	Franklin	24,727

Source: Massachusetts Division of Tourism

As in all aspects of life, balance is the key to success. Massachusetts has a fine environmental track record with its open space bonds and various programs that are directed toward the protection and preservation of the environment. Commitments to health, the natural and cultural environment, and the provision of recreational opportunities are among the highest of priorities. It is equally important to retain an environment of economic prosperity. Thus, there is logic in the commitment to work out mutually beneficial relationships between the public and private sectors rather than forging a battleground of "land use versus land conservation."

Is anything missing from the preservation and progress equation? As important and as deserving of top billing, is ethics. The origin of ethics itself stems from the tendency of interdependent individuals or groups to evolve modes of cooperation. As Aldo Leopold reminds us in *A Sand County Almanac*, "The extension of ethics beyond philosophy into the study of ecology has been an evolutionary process" - - a process that we can assume is continuing. Yes, preservation and conservation make economic sense, but ethically, they are also the right things to do. Ethics in dealing with our human interdependence with land, animals, plants and other resources is not a fully developed concept. As we continue this evolutionary process of interpreting an environmental ethic for the Commonwealth, EOEA seeks to provide leadership in finding ways in which our environmental policies can reflect a highly developed environmental ethic.



Photo by Pamela Bailey



Photo by Larry Klar

Building an economically stable society that has a highly evolved environmental ethic is not an impossible task. Before us today are many examples of how poor environmental policies have created a tremendous burden on our economy as we must now continually search for waste facilities and expend large sums on hazardous waste clean-up and disposal. What more evidence do we need before we incorporate sound environmental protection practices? Decision makers find themselves wondering where to find the balance. The only real alternative is to integrate environmental policies into state and local economic development policies.

Protecting our resources and providing recreational opportunities for our citizens needs to make economic sense. For example, as long as it costs more to recycle products than to dispose of them, the business community will continue to produce disposable items. We can begin to turn the tide by (1) establishing new goals for technology through economic incentives for developing efficient recycling methods, new technology for waste disposal, salvage, composting and low cost alternative sources of energy, etc., (2) making ecology part of our everyday living through curbside pick-up of materials to be recycled, banning the sale of home appliances that are not energy efficient and (3) making conservation part of the everyday business community, not only by devising negative incentives such as penalties, but by recognizing environmentally conscious businesses and providing them with positive incentives such as reductions in taxes. For example, through the Historic Preservation Tax Act, owners of National Register buildings in commercial, industrial or rental-residential areas qualify for a 20 percent investment tax credit for enhancing the quality of life in their respective communities.

The Executive Office of Environmental Affairs and its agencies are dedicated to providing information and pursuing actions that make sound, ethical sense, basing

decisions on research and clearly formulated policies. Integrating these policies and actions into the state's overall plan for economic development will not be an easy task. But it is, without a doubt, a vital one.

Realizing the Vision

It was in 1963 that Congress established the Outdoor Recreation Resource Review Commission. The commission's work led to recommendations that have guided the nation's comprehensive outdoor recreation planning for more than two decades. From it also came the federal Land and Water Conservation Fund, specifically established to help states acquire and develop outdoor recreation resources. To qualify for Land and Water Conservation Fund allocations, all states are required to develop Statewide Comprehensive Outdoor Recreation Plans. Administered through the Department of the Interior, the National Park Service (NPS) is the agency which oversees the entire SCORP process.

Since 1965, the Commonwealth of Massachusetts has worked with the National Park Service to secure federal Land and Water Conservation Funds. To some extent, the success of this process can be measured by the \$77 million appropriated over a 20-year period, allocated to a variety of state and local projects. Massachusetts has used those federal dollars to develop, preserve and protect resources, focusing on the present to ensure a more desirable future.

The 1988 SCORP represents a two-year effort by the Executive Office of Environmental Affairs and its agencies to comprehensively study open space and outdoor recreation opportunities for the people of the Commonwealth. In the eyes of the National Park Service, Massachusetts has conscientiously addressed these issues:

When a planner sees himself (herself) as an activist and refuses to let the documents he (she) has worked on gather "shelf-life," the results can be spectacular and can have a wide range of benefits. When the planning document is something traditionally viewed as boring and bothersome, something required every five years by the Feds, as SCORP is frequently perceived to be, a fresh approach, seeing the SCORP as a pertinent and useful document, can be considered almost revolutionary. Perhaps it is not surprising that such an approach arose in Massachusetts where a history of revolutionary ideas is a matter of pride. The Commonwealth has always taken its ideas to the people and that approach still serves. (National Park Service, 1985)

The 1988 SCORP is an outgrowth of the two previous statewide plans, combining the approaches of both. The 1978 document was primarily oriented toward the presentation of detailed data related to supply and demand. The 1983 SCORP emphasized policy development and recommended actions for various environmental agencies. This document has attempted to address both areas. Thus, the following actions were integral to this report:

- A review and revision of 1983 policies and actions
- Assessments of resources and public demand
- Assessments of minority and disabled populations
- Identification of municipal issues and concerns related to open space and recreation
- Management and operations issues related to open space and recreation
- Extensive input from a diverse Technical Advisory Committee (TAC)

The Way We Did the Things We Did

This document was developed through a complex process which began with the formulation of goals and objectives and ended with the development of priorities, policies and courses of action. Part of that process is discussed in this section.

SCORP Goals and Objectives

The purpose of producing the 1988 SCORP is to initiate a comprehensive planning process which will assist public and private environmental, open space, conservation, park and recreation professionals in their efforts to enhance the quality of life for all residents of the Commonwealth. It also establishes eligibility for grants from the federal Land and Water Conservation Fund, which provides support for recreation, park and conservation projects throughout the nation. The Executive Office of Environmental Affairs (EOEA), the state office charged with the development of the SCORP, is responsible for managing over 60 percent of all state-owned public land. Hence, EOEA must play a major role in ensuring the proper use and protection of the Commonwealth's public lands. Since 1978, EOEA's Department of Environmental Management, Division of Planning and Development, has taken on the challenges of creating the SCORP.

The 1988 plan, coordinated by DEM, is in many ways more ambitious and all-inclusive than its predecessors. Staff members have regularly conferred with other state agencies, municipal officials, environmental interest groups, state property managers and private citizens on a broad range of issues during its preparation. The complexity of developing a relevant SCORP was such that it was necessary to formulate objectives that addressed a variety of important issues. The specific objectives were:

- to identify key issues of concern to state and local officials and citizens through public hearings and professional meetings;
- to gather and analyze data related to the assessment of (a) open space, outdoor recreation and conservation resources, (b) public attitudes, interests and needs, (c) municipal problems and concerns and (d) management and operations issues for state-managed properties and facilities;
- to present statistical reports which integrate data related to supply and demand as well as the findings of the municipal and state facility managers surveys;
- to develop policies and actions useful for state and municipal officials in protecting the environment and providing outdoor recreation opportunities through public hearings, input from the Technical Advisory Committee and an in-depth analysis of all survey results; and
- to disseminate information and provide planning tools related to the Land and Water Conservation Fund, the Massachusetts Wetlands Protection Plan and other planning documents useful at state and local levels.

Public Participation

Gathering information that accurately represents the general public involves a complex process. Although Massachusetts is geographically a small state, its population is diverse. There are over 5.7 million people scattered throughout large urban centers, vast suburbs and small rural communities. Some demographic statistics can be deceptive: although Massachusetts is generally regarded as an urbanized "eastern industrial state," 57 percent of the Commonwealth's communities have populations of less than 10,000.



Photo by Robert McArthur

By themselves, the scientific approach and visionary planning are often inadequate for wise governmental decision making; thus, added to those were several additional essential ingredients: public participation, a humanistic perspective and consideration of the interests, attitudes and needs of diverse groups of people. Effectively involving the public required a five-pronged plan: developing a Technical Advisory Committee of citizens and environmental professionals; conducting public hearings across the state; hosting legislative workshops to air the concerns of varied constituencies; and conducting both public and municipal surveys to assess citizens' interests and their demand for outdoor recreation opportunities. The following summarizes the public participation process carried out during this project:

The Technical Advisory Committee (TAC). TAC membership reflects a broad base of professional and personal interests, including state and local governments, private profit and nonprofit organizations and private citizens. While the TAC was created to advise the EOEA, to approve distribution of federal Land and Water Conservation Funds and to oversee SCORP production, the latter project has in fact consumed much of the TAC's past year. Regrouped into five specialized subcommittees, and dealing with everything from urban self-help projects to the need for outdoor recreation facilities and the public interest in conservation and recreation issues, committee members researched their topics and recommended actions which have been included in this document.

Public Hearings. Two public hearings were held in each of seven separate regions of the state. The first was scheduled in the daytime to accommodate environmental professionals and the second was held in the evening to facilitate participation by the general public. The MDC regional meeting was interpreted for the hearing impaired and publicized within the deaf community. The 1988-90 Action Plan incorporate issues and recommendations from these gatherings.

Legislative Workshops. Next came a pair of workshops for state legislators. The initial meeting, held at the State House, identified issues in protecting open space and providing outdoor recreation, while setting up a working process. Following a two-month period of public meetings and research within various legislators' constituencies, a second meeting was held to present recommendations and discuss courses of action.

State Managers Survey. A Survey was developed for state managers to identify their key concerns and the issues that affect the provision of services at their sites and

facilities. Areas of focus included recreation, conservation and environmental issues, management, funding and a variety of other factors. Nearly 200 managers across the state participated and provided important input that shaped the recommendations of this planning document.

Public Demand Survey. To reach a representative cross-section of the general public, a telephone survey of 3,500 people was undertaken. Information collected on the supply and demand for outdoor recreation, categorized by geographic regions and demographic subgroups, provided a basis for the recommendations in this report.

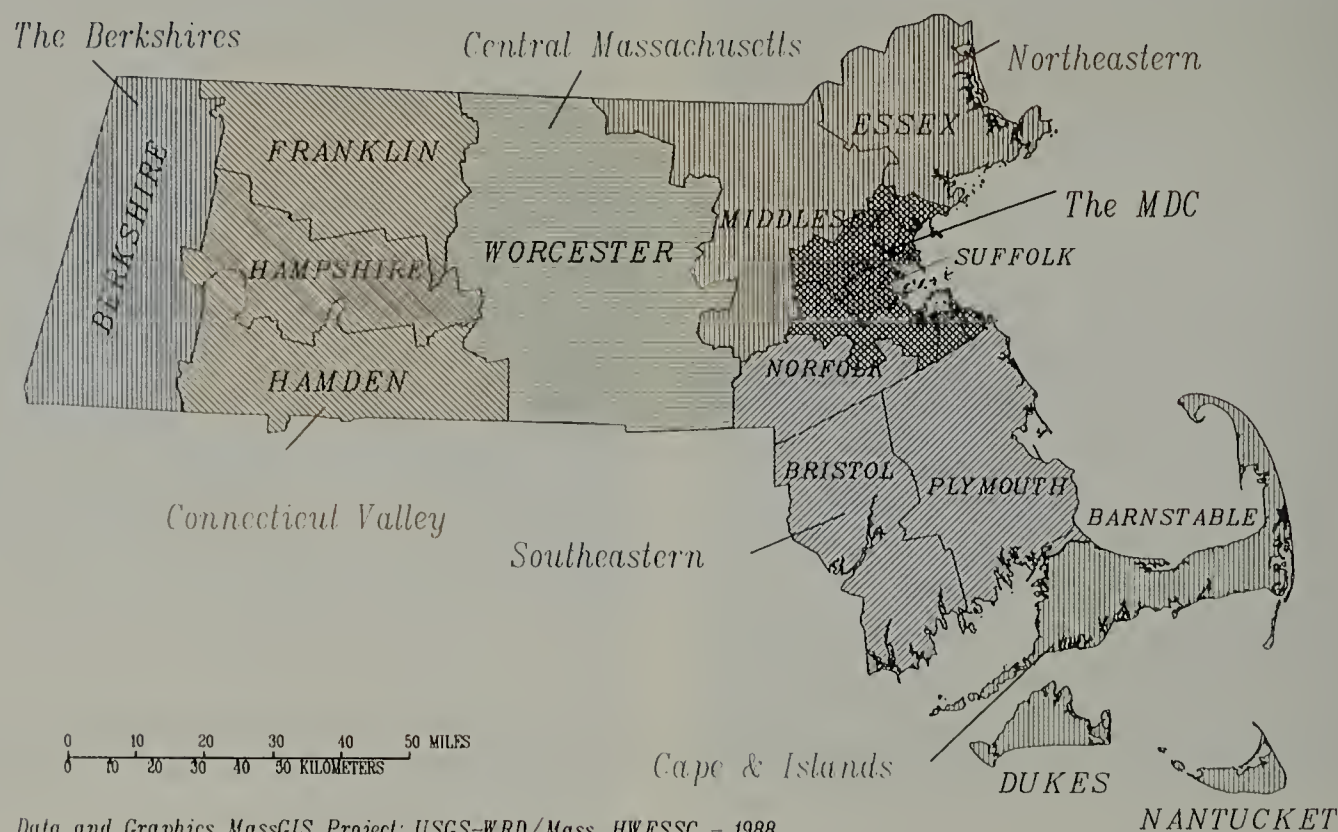
Municipal Survey. The chief administrator within each Massachusetts city and town had an opportunity to respond to the municipal survey which was developed to focus specifically on issues at the community level. While the approaches to completing the survey varied, all respondents attempted to identify issues that were of greatest concern to their respective governments and, therefore, to the residents of their communities. The results of this survey aided in validating the data obtained through the other methods described above and are presented in Chapter Four.

1988 Planning Regions

Over the years, the Commonwealth's cities and towns have been arranged into various SCORP planning configurations in an effort to formulate groupings that would be the most meaningful to planners and administrators in a variety of agencies and organizations. To that end, there has been change in 1988. The current planning region breakdown consists of seven regions rather than the five developed for the 1983 SCORP and the thirteen incorporated in the 1978 SCORP.

Perhaps unlike the process that was used in previous years, the decision to create a seven-region model involved individuals from a wide base; that is, the decision to form seven planning regions was made by members of the diverse Technical Advisory Committee, the Supply and Demand subcommittee, planners within EOEA agencies, and the consultants who developed the supply inventory. It is important to emphasize that the Supply and Demand subcommittee consisted of private citizens and representatives from nonprofit organizations as well as individuals within EOEA agencies, such as MCZM, DFWLE, DEM and the MDC. This permitted input from individuals holding highly different points of view. The seven-region configuration is presented graphically in Figure 1.1 preceded by a brief description of characteristics that typify each region.

Figure 1.1
1988 SCORP Planning Regions



Data and Graphics MassGIS Project; USGS-WRD/Mass. HWFSSC - 1988

The Berkshires. This is the least populated region in the state and the most rural. It is known for its natural resource and culture attractions which include panoramic views, rivers and lakes in the Berkshire Mountains, summer concerts at Tanglewood and Jacob's Pillow, and summer theater productions in the town of Williamstown.

Connecticut Valley Region. Marking the beginning of Western Massachusetts, this three-county region includes a mix of rural hill-towns; heavily wooded state parks and forests; rivers, streams and small lakes; and several urban areas such as Springfield, Holyoke and Chicopee.

Central Massachusetts Region. Consisting of Worcester County in central Massachusetts, this region is typically rural to the north and south, yet is the home of the city of Worcester, second only in population to Boston.

Northeastern Massachusetts Region. This relatively populated region includes urban, suburban and rural communities. It is characterized by seaport villages, rural countryside and significant cultural and historic sites.

MDC Region. This highly urban and suburban portion of the state includes the city of Boston and those communities outside of Boston which are encircled by Route 128. It is within this area that the state's Metropolitan District Commission (MDC) has its greatest responsibility for providing recreation services such as its many parks, swimming pools and skating rinks.

Southeastern Massachusetts Region. The southeastern region is mixed in terms of its urban, suburban, and rural character and its wooded, open and coastal areas. New Bedford is particularly noteworthy within this region with its major commercial fishing industry.

The Cape and Islands. This region consists entirely of coastal communities, including the islands of Martha's Vineyard and Nantucket. It is known throughout the country as an exciting tourist location with its pristine beaches, quaint fishing villages, oceanside sand dunes, summer entertainment and many specialty shops.

The seven-region model was adopted specifically for presenting the results of the supply and demand analyses. This model was not used for the municipal survey since the decision to change to the more sensitive, seven-region configuration was made after the the municipal study had been completed. Interestingly, the analyses of the municipal survey findings did not reveal many significant differences among the five regions; however, those which did emerge will be presented in Chapter Four in the context of the following regions: (1) Southeastern Massachusetts, the Cape and Islands, (2) Northeastern Massachusetts and Metropolitan Boston, (3) Worcester County (identical to the Central Massachusetts Region), (4) Hampden, Hampshire and Franklin Counties (identical to the Connecticut Valley Region) and (5) Berkshire County (identical to The Berkshires region).

Implementing the Process

The Executive Office of Environmental Affairs undertook the most extensive research project in its history to formulate the recommendations and planning tools presented in the 1988 SCORP. Under the direction of the Department of Environmental Management, researchers in the Department of Landscape Architecture and Regional Planning at the University of Massachusetts (UMASS) at Amherst, developed a research program that addressed the varied concerns of Bay State residents. Specific survey instruments were developed in cooperation with the SCORP Technical Advisory Committee and administered by UMASS and Atlantic Research Company, Boston. This section chronicles the process used to develop the following data-collecting devices:

- The inventory of existing properties and facilities
- The public interest survey
- The state property and facility managers' survey
- The municipal administrators' survey
- The Public Information Directors' survey

Each of these data-collecting devices, or survey instruments, was designed for a specific task with a specialized purpose in mind. Complete copies of each survey are included in Volume Two.

Inventory of Properties and Facilities

Why: The primary purpose of the supply inventory was to update information on existing Massachusetts open space and outdoor recreation sites and facilities, refine and expand the 1978 inventory sheet and provide comparative data.

Who: Chief executives within all 351 Massachusetts communities were identified and contacted through listings provided by the Office of the Governor. Within each community, knowledgeable individuals were designated to inventory all resources within the recreation, conservation and park sites located in their respective communities, regardless of the agency responsible for the administration of those sites. Through a variety of other sources, key administrators were also contacted within the private, nonprofit sector which included such agencies as The Audubon Society, The Trustees of Reservations, The Appalachian Mountain Club, Family YMCA's, Girl's and Boy's Clubs, Girl and Boy Scouts and 4-H. Knowledgeable administrators within EOEa departments and divisions were also identified and involved in the process of providing inventory information for state-managed sites.

What: A site inventory form, updated from the 1978 version, was developed by the University of Massachusetts, state agency staff, the Technical Advisory Committee, and

the EOEa Data Center. The new survey form included 127 variables. (The 1978 list included 60 variables.) Other refinements included the addition of information on use levels, expansion potential, developed site use and handicapped accessibility. Inventoried activities were grouped into one of five categories: water-based, resource-based, sport and recreation-based, propulsion-based and winter-based. The new site inventory form includes the following:

- General site description information
- Facility and handicapped accessibility information
- Water and trail inventory information
- Activity inventory
- Site description
- Site classification information

How: During June and July of 1987, a pilot study was conducted in approximately 40 towns, selected from each region of the state. Research assistants engaged in ongoing follow-up. The findings of the pilot process led to the refinement of the survey form, clarification of survey instructions and changes in distribution methods of site packets to town officials.

The Public Interest Survey

Why: The purpose of the survey was to assess the recreation needs and interests of all Bay State residents.

Who: A sample of households was drawn from the entire state. A technique known as "disproportionate stratified sampling" or "quota sampling" was employed. In practical application, that meant some 200 interviews were completed per county. Minority and handicapped groups were randomly oversampled and 750 additional interviews were completed. People with disabilities were identified through listings provided by the State Office of Handicapped Affairs, while other individual households were identified by using telephone exchange directories and a random digit dialing technique.

What: The 1988 instrument collected detailed information about recreational activities during both the warm and cold seasons, using three rounds of questions. Other survey items included travel patterns to beaches and coastal areas, awareness and assessment of state facilities, policy issues and general demographic questions.

How: On three different occasions in July and August of 1987, the public survey was pilot-tested by interviewing nearly 50 randomly selected individuals. After alterations in wording and sequence, the final version of the survey was accepted in September. The telephone survey was conducted by Atlantic Research Company in September of 1987 over a six-week period.

Property Managers Survey

Why: The primary purposes of this survey were to collect information from state property and facility managers on the condition of facilities under their management, to identify issues related to park and recreation opportunities and problems, and to solicit ideas for state policy development.

Who: Nearly 200 managers of outdoor recreation facilities and properties from the four land management agencies within EOEA participated in the survey. Included were those with site-specific, regional and statewide management responsibilities.

What: Questions in the survey included descriptions and suggestions for improvements in current site conditions, personnel management, funding priorities, maintenance, interpretive programs, services and public relations.

How: The managers' survey was piloted among DEM management staff, reviewed by representatives from EOEA's five agencies, then refined and again reviewed by the SCORP Technical Advisory Committee. Survey forms were distributed in December, 1987.

The Municipal Survey

Why: The purpose of the municipal survey was to identify and assess critical issues related to open space, outdoor recreation and conservation in cities and towns across the Commonwealth in order to develop more effective policies affecting local governments.

Who: Municipal officials, particularly those known by chief administrators to be knowledgeable about open space, recreation and conservation issues, completed the survey.

What: This survey identified levels of importance of 20 issues related to open space, recreation, conservation, the effects of Proposition 2-1/2 and the need for state and local funding.

How: The municipal survey was pilot-tested in towns within each planning region. The refined instrument was sent to the chief administrators of all 351 Massachusetts communities during the summer of 1987.

Public Information Directors Survey

In addition to the four surveys previously described, the Technical Advisory Committee developed a survey for state Public Information Directors which is described as follows:

Why: The Technical Advisory Committee directed this survey to the Public Information Directors of nine EOEA agencies to gather information and make recommendations on how the agencies inform the public and to what degree

they are involved in public education related to environmental concerns.

Who: Public Information Directors from the Executive Office of Environmental Affairs, the Department of Food and Agriculture, Massachusetts Coastal Zone Management, the Department of Environmental Quality Engineering, the Department of Environmental Management, the Department of Fisheries, Wildlife, and Environmental Law Enforcement, the Metropolitan District Commission, the Division of Conservation Services and the Massachusetts Environmental Policy Act Unit received the survey. Eight agencies responded.

What: The survey gathered information on the coordination and distribution of public information, the coordination and provision of technical assistance and agency involvement in public education. A copy of this survey is included in Volume Two.

How: The survey was developed by the TAC subcommittee on Public Information and Education and distributed in the the fall of 1987.



Photo by Paul Rezendes

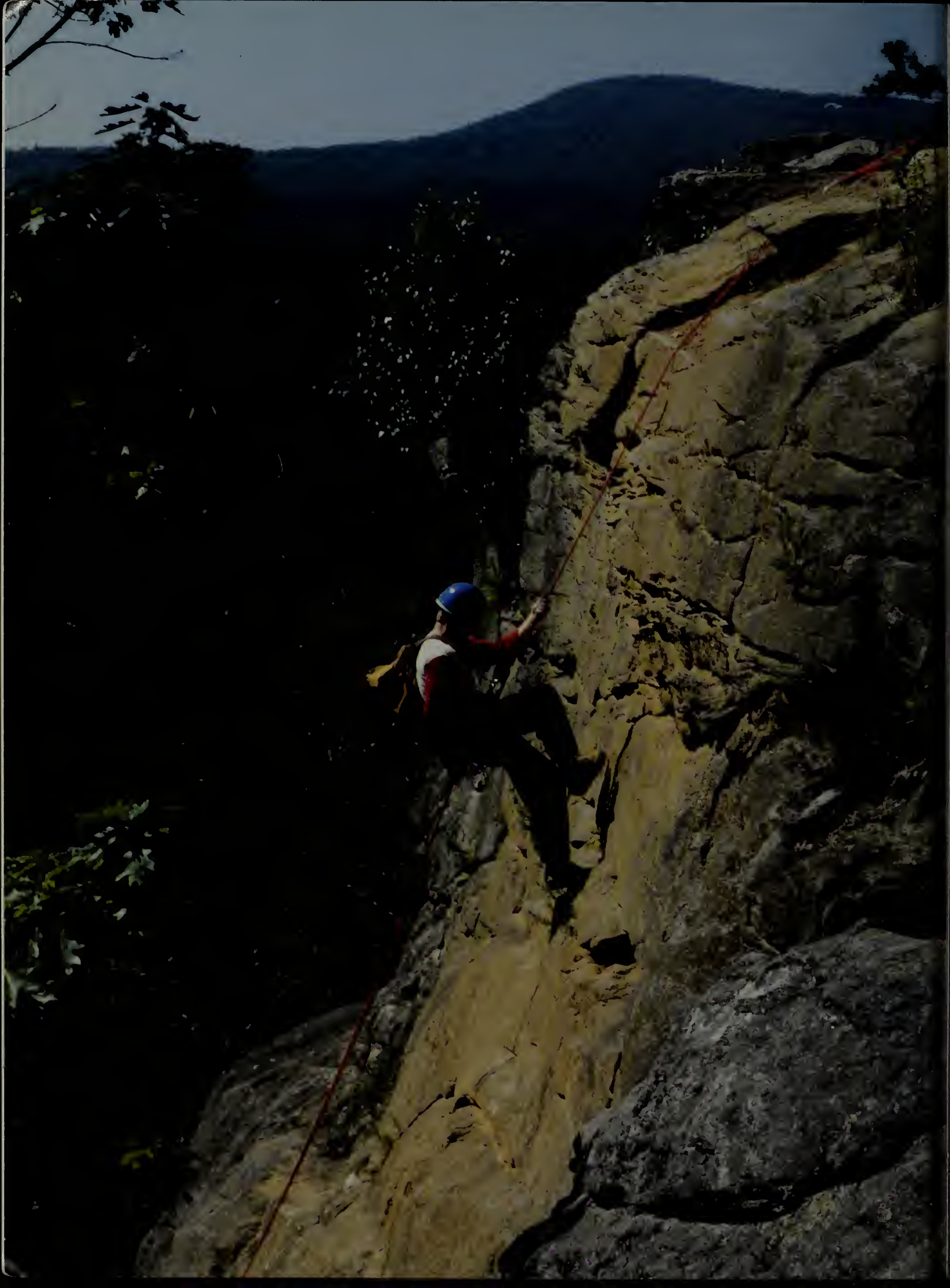
We've Only Just Begun

The research is extensive, the data seemingly endless. Because of this, the 1988 SCORP is most useful as a two-volume document. Volume One presents an overview of statewide planning while Volume Two serves as an action plan and workbook. This resource book includes plans, actions, telephone numbers, charts, tables and maps related to open space, conservation, outdoor recreation and park resources throughout the state. The findings of many studies and the thinking of numerous individuals are presented in this document. Those who have been involved in this process hope the 1988 SCORP will be one which helps us gather momentum, rather than one which simply gathers dust.

Years of Accomplishment

*Governments themselves cannot achieve
a high-quality environment; they can
only provide mechanisms and
opportunities.*

President's Commission on Recreation
and National Beauty
From Sea to Shining Sea



Responding to the Challenge

Evolution plays an even more important role in human existence than we may initially realize. We as individuals evolve both physically and intellectually. In a similar way, the processes and products of our society also evolve, as has the production of the Statewide Comprehensive Outdoor Recreation Plan. With each passing SCORP, EOEА agencies have evolved and have recorded significant accomplishments which illustrate progress in responding to the challenges.

Every five years, the SCORP publication defines and plans for the protection of open space and the provision of outdoor recreation. The document has progressed each year to reflect the need to address a much broader range of issues such as the relationship between economic development and the protection of natural, cultural and recreational resources, the health and public enjoyment of the environment. It will no longer suffice to present the "outdoor recreation plans" of yore, by essentially formulating a laundry list of outdoor activities, from birding to skiing and biking to hiking, along with references to the demand for each. To keep pace with change, this document had to reflect the interdependence of recreation opportunities and the health of the environment.

Thus, today's open space and outdoor recreation plan speaks to the quality of life which allows us to enjoy our environment, whether at home, work or play. This approach to our comprehensive plan includes a wide range of public debates on issues including wetlands protection, hazardous waste dumping, development, open space, and historical and cultural preservation. And, as public debates continue, the Executive Office of Environmental Affairs is committed to acting in the public interest, assuring the people of the Commonwealth a healthy place in which to live and play. Reviewing agency and legislative accomplishments since 1983 demonstrates this commitment and helps us understand how the document, various agencies, and our society have evolved over the years.

Progress by Agencies and the Legislature

The list of accomplishments among the five agencies and other offices of EOEА is impressive. Add to that list the extensive contributions of the state legislature, other state agencies, the 351 cities and towns, private profit and nonprofit agencies, and private citizens, and one sees that the residents of Massachusetts are highly conscientious in working toward environmental protection and providing high quality outdoor recreation opportunities. The following summarize some of the Commonwealth's major accomplishments since the publication of the 1983 SCORP.

Legislative Accomplishments

Over the past five years, the governor and state legislators have enhanced old legislation and created new, all with the goal of protecting the resources of the Commonwealth and providing outdoor recreation opportunities. The following accomplishments are among the most noteworthy:

1983: The Wetlands Protection Act is strengthened, preventing private development from altering any wetland area beyond 5000 square feet . . . \$162 million is authorized for open space preservation programs, with passage of the 1983 Environmental Capital Outlay, MGL Ch. 723 . . . Urban waterfront development is brought under strong state surveillance, due to passage of an amendment to MGL Ch. 91, the oldest waterways statute in the nation . . . The Massachusetts Coastal Zone Management office becomes a permanent office within EOEA.

1984: The Water Resources Authority is established to clean up Boston Harbor and upgrade the metropolitan water supply system. . . Likewise, the new Division of Watershed Management within the MDC is created to operate, plan and regulate watersheds and reservoirs.

1985: The Acid Rain Control Act is passed, providing new state standards to curb emissions . . . The new Administrative Penalties Act allows the state to penalize polluters.

1986: The "protection of wildlife habitat" becomes a priority of the newly strengthened Wetlands Protection Act.

1987: The historic \$500 million open space bond is enacted, with provisions for (1) acquiring park and coastal lands, (2) purchasing development rights to farms, (3) protecting watershed areas, (4) acquiring wildlife corridors, (5) further developing the Heritage State Park system, (6) funding Self-Help and Urban Self-Help programs to aid cities and towns and (7) a variety of other significant open space and outdoor recreation programs . . . Critical environmental legislation is passed, providing \$260 million for solid waste disposal and \$81 million to implement the State Superfund Amendment of 1986. The latter consists of \$60 million to replenish the State Superfund and \$21 million for an Environmental Challenge Fund to employ 460 new members of the Superfund staff.

Who's Who in EOEA

Over the past five years the Executive Office of Environmental Affairs and its agencies have continued to manage ongoing programs while also creating new ones aimed at preserving and enhancing the Massachusetts environment. Below is an organizational chart listing the offices and departments within EOEA followed by brief summaries of some of their many accomplishments.

EOEA and its agencies have worked to preserve and enhance the Massachusetts environment by managing and creating innovative programs. In the following section, each of these agencies and their accomplishments are identified and explained.

Organizational Chart for State Environmental Agencies

Governor's Office

Executive Office of Environmental Affairs

Five Special Offices

Division of Conservation Services
Massachusetts Coastal Zone Management
Massachusetts Environmental Policy Act Unit
Hazardous Waste Facility Site Safety Council
Massachusetts Water Resources Commission

Five Departments

Environmental
Management

Environmental
Quality Engineering

Fisheries, Wildlife and
Environmental Law
Enforcement

Food and
Agriculture

Metropolitan District
Commission

The Executive Office of Environmental Affairs (EOEA). EOEA is the principal executive office working on both improving the quality of the environment and protecting the Commonwealth's natural resources. As an administrative office, EOEA manages five departments, as well as five special offices.

Between 1965 and 1986, EOEA, through the Division of Conservation Services, was able to direct \$77,114,618 in Land and Water Conservation funds to various state and local projects. In 1987, more than \$1.5 million of LWCF money went to local projects in Mashpee, Northampton, Montague, Truro, Orleans and Worcester. These funds also allowed DEM to complete this report.

Extensive studies on reducing hazardous waste, through source reduction and sound disposal facilities, have been completed under the auspices of the Hazardous Waste Facility Site Safety Council. That council is also working on a cooperative agreement with the U.S. Geological Survey to map the state and develop a computer-based geographic information database.

An additional EOEA accomplishment of note has been the mapping and categorization of over one million acres of soils through the Accelerated Soil Program. The entire state should be mapped by the end of 1988, thanks to the cooperation of the USDA Soil Conservation Service and the State Commission for the Conservation of Soil, Water and Related Resources, which is advisory to the Division of Conservation Services.

Department of Environmental Management (DEM). DEM acts as the Commonwealth's natural resource planning and management agency. In essence, DEM plays steward to thousands of acres of state forest and park land, conserving open space and providing opportunities for public recreation. Additional DEM responsibilities include planning for long-range water resources and for safe hazardous-waste disposal, as well as managing dams and waterways.

DEM's recent accomplishments have included developing new state parks, revitalizing the Dam Safety Program, restoring historic parks originally designed by the famed Frederick Law Olmsted, and improving several Boston Harbor Islands. During the five-year period beginning in 1983, DEM was able to buy 11 new land areas and 206 inholdings. That \$41,742,383 purchase added 8,419 acres of protected land to the state's forest and park system.

Noteworthy acquisitions in that period included 672.8 acres of coastal property, which doubled DEM coastal properties available to the public at a cost of \$12,388,663. In addition, 57 miles of bicycle and recreation trails, culled from the purchase of five abandoned railroad rights-of-way were acquired. Trails for hiking were the focus of DEM's

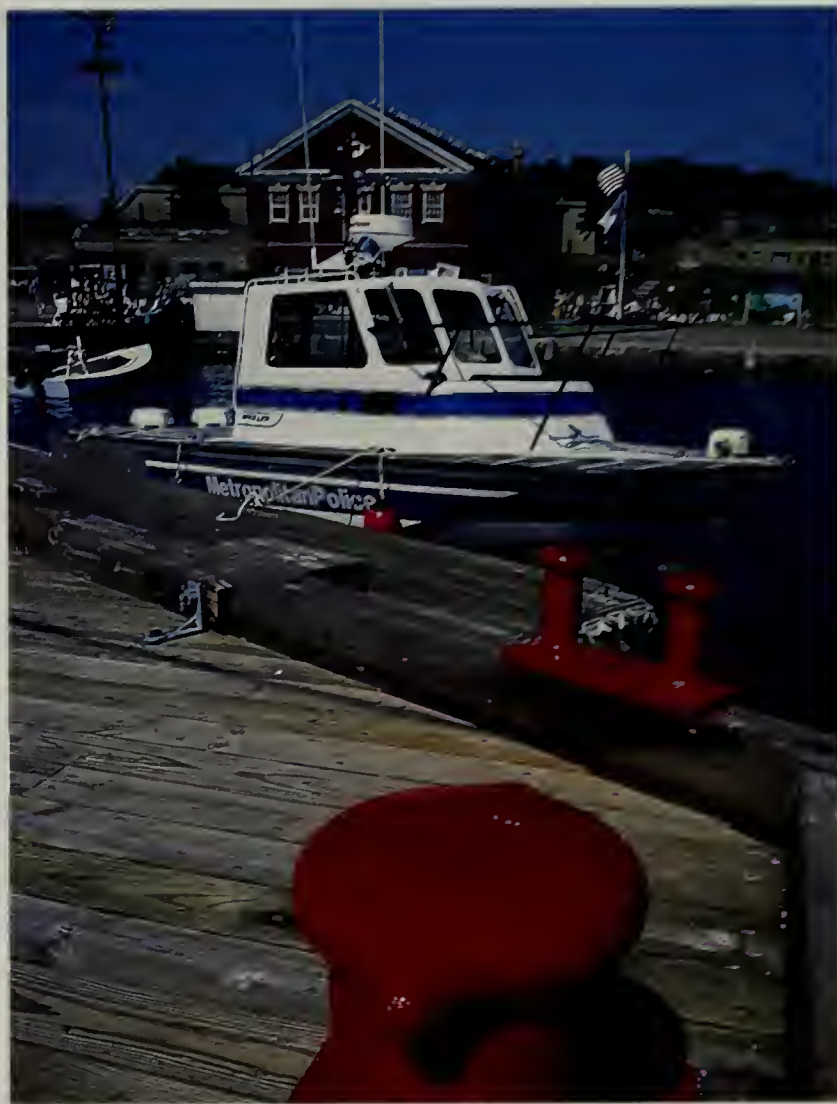


Photo by Susan Wilson

1986 Study of Long-Distance Hiking Trails, which inventoried selected paths to develop a statewide master plan for the Commonwealth's pedestrian trails.

Some of DEM's successes have been directly linked to local communities. The Bay Circuit Program has been actively working with 51 communities, identifying and protecting important parcels, while developing a network of connected parks and open space. The program has awarded 26 planning grants, acquired four key parcels and given free planning assistance to many of these communities. Another 86 communities were awarded a share of \$285,000 to help pay for household hazardous waste collection provided by DEM's Office of Safe Waste Management. Meanwhile, the town greens and city squares of 21 other Commonwealth municipalities are being restored thanks to \$7 million from the City and Town Commons Program. Through the Division of Water Resources, 50 communities received technical assistance related to floodplain management. The Division also finalized the Ipswich River Basin Plan which will help ensure water availability to meet current and future water needs.

The forests and parks have benefited from recent programs and studies as well. DEM's GOALS Program (*Guidelines for Operations And Land Stewardship*) has completed long-range management plans for 24,000 acres,

including Wachusett Mountain State Reservation, Harold Parker State Forest, Myles Standish State Forest, Wompatuck State Park and D.A.R. State Forest, Mt. Greylock State Reservation, Holyoke Range State Park and J. Harry Rich State Forest. Park improvements during 1987 included beach expansion and wheelchair access at Erving State Forest, bank stabilization and erosion repairs to Walden Pond and new restrooms at Agawam's Robinson State Park. Most telling was that visitation to all of the Bay State's forests and parks rose 85 percent between 1977 and 1987.

The term *resources* includes both the natural and the cultural. In acknowledgement of that fact, DEM established a new Office of Cultural and Historic Landscapes in 1986, which combined the Division of Planning and Development's Olmsted Parks Restoration, City and Town Commons, Cultural Resource, Properties of Historic and Cultural Interest and Arts Planning Programs.

Department of Environmental Quality Engineering (DEQE). DEQE administers the Commonwealth's environmental regulatory programs for air, water, solid waste and land-use controls. DEQE and its six divisions manage and control air quality, regulate activities affecting wetlands, oversee and regulate drinking water quality, and

manage water quality in general. Specific related projects of DEQE have included regulating billboards, protecting the sanitary quality of shellfish harvesting areas, controlling aquatic vegetation and regulating both the storage and transportation of hazardous wastes. Additionally, with the passage of an amendment to Chapter 91, DEQE licensing jurisdiction was extended to include filled tidelands and thus brought virtually all urban waterfront development under strong state oversight.

Curbing the negative side-effects of industrial growth has been a "natural" focus for DEQE. Over the past four years, in fact, that agency's budget for hazardous waste investigation and clean-up has nearly quadrupled, enabling it to double its regulatory staff at some 600 hazardous waste sites. Meanwhile, 183 separate industrial violators were forced to pay \$1,755,215 in penalties during 1987 alone, thanks to DEQE's tough enforcement of the many Massachusetts environmental laws.

Water, water everywhere, and plenty of clean, clear drops to drink, again thanks to DEQE. In 1987, a year of greatly increased responsibility for DEQE, its Division of Water Supply distributed \$13,477,131 to communities or Water Districts through the Water Filtration Grant Program. Under that program, another \$1,366,214 was awarded for



Photo by Jack Swedberg



Photo by Paul Rezendes

leak-detection grants. At the same time, its Division of Water Pollution Control administered \$253 million in federal, state and local grants for waste-water treatment.

Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE). DFWELE exists to maintain and improve the quality and quantity of sea-life, wildlife and the places they inhabit, through ambitious programs of research and restoration. Among the concerns of that agency are the welfare of Bay State finfish, shellfish, game and nongame wildlife species, as well as rivers, streams and coastal waters. DFWELE also enforces rules and regulations pertaining to environmental protection and the recreational use of state properties.

DFWELE's record, particularly in 1987, has been an impressive one. That year alone, the department purchased over 2,800 acres for open space preservation which added to the 52,000 acres already under its management. The same year DFWELE developed a new Riverways Program which administered 10 grants to watershed organizations for use in river and watershed protection. At the same time that agency created a new Adopt-a-Stream program, helping 19 local and regional watershed organizations protect the Commonwealth's smallest waterways.

Boating and boating safety have been other major DFWELE concerns. The department's Public Access Board labored throughout 1987 to construct and repair 11 sites for boat access to various shorelines, rivers and ponds. It also published a statewide guide to 121 access sites constructed by that Board. In the meantime, the Division of Law Enforcement increased the state's number of boating safety courses by 60 percent in 1987. More than 40 courses were sponsored, resulting in the issuance of 1,027 boating safety certificates and 8 recreational vehicle safety courses were offered, with 935 graduates receiving certificates.

Other DFWELE statistics include the following: almost 3,700 acres of river banks near wildlife preserves have been

protected under its direction while, over the past five years, the department committed over \$1 million to rare and endangered species programs from the state's nongame income tax check-off with \$419,000 of that amount coming in 1987 alone.

Department of Food and Agriculture (DFA). DFA is a regulatory agency whose primary purposes include ensuring the quality of certain agricultural products, and preventing disease through inspection and control. In the latter case, inspections are made of poultry, livestock and any dairy farms which disseminate milk products in the state. DFA methods of control involve monitoring and minimizing plant pests and diseases. The Department also promotes Massachusetts grown products by supporting farmers' markets, while matching funds for the promotion of agricultural commodity groups.

Many of the DFA's major successes have involved acquiring, identifying, improving and protecting various farmlands. As of November of 1987, more than 700 acres had been leased under the State-Owned Farmland Project. More than 300 of those acres were leased by institutions and nearly 400 acres by private farmers. Since 1985, the Municipal Farmland Identification Program has been inventorying and mapping all the Commonwealth's active agricultural lands. By 1989 that essential inventory should be completed and digitized into the state Geographic Information System (GIS). The Agricultural Preservation Restriction Program helped preserve a total of 20,000 acres on 220 privately-owned farms by the end of 1987. EOE agencies have a total of 3,007 acres of agricultural land protected in the Commonwealth, under Article 97 of the Constitution, which buys the development rights and allows the land to remain in private ownership.

The DFA's accomplishments go much further than its direct work with farmlands. Under its Adopt-a-Space program begun in 1985, for instance, over 80 public open space parcels have been "adopted" for beautification by members of the Massachusetts Green Industry. In 1987, Bay State pesticide use was reduced 25 to 50 percent, thanks to the department's Pesticide Management Programs. It is hoped that the result of the 3-year, \$270,000 research grant completed in 1988 investigating the effects of acid rain on Massachusetts agriculture, will further enhance efforts to protect our agricultural resources.

Metropolitan District Commission (MDC). The MDC provides a variety of essential services to 54 cities and towns. Most obvious is the 650 member police force which is New England's third largest. In 1987, a five-year action plan was approved for the force, signaling the MDC's renewed commitment to excellence, management and delivery of services to the millions of people using MDC



Photo by James Fisk

parks, waterways, reservations and roadways. The MDC is also responsible for managing over 118,000 acres of land and water including Quabbin Reservation and Wachusett Reservoir. Its Division of Watershed Management provides water for 2.4 million people in 46 communities. In addition, the MDC has developed an aggressive planning and acquisition program for the protection of water supply and wildlife habitat and maintains parks and recreational facilities in 37 different cities and towns.

Listing major MDC accomplishments over the past five years is, happily, an almost endless task. The point will be made clearer by a sampling of the variety of projects completed in that brief period: since 1983 the MDC has acquired and developed new waterfront parks, made major roadway improvements, expanded musical programming at the Hatch Shell and other local bandstands, increased free environmental education programs for the public, and stepped up roadway safety and sobriety check activities. Extensive beautification programs have been initiated, a master plan for managing and expanding watersheds was developed and the presence of management at the reservations has continued to increase. The Division of Watershed Management also implemented a model watershed crew to initiate forestry treatment of

environmentally sensitive sites and began the operation of a visitors' center at Quabbin Reservoir.

The MDC's Parks Division has been divided into three units to manage its nearly 15,000 acres of open space and recreation facilities. Those units are Reservations and Historic Sites, Recreational Facilities and Programs, and Parks Engineering and Construction. Meanwhile, the Parks Division of the MDC offered over 100 events during 1987, including historic tours, nature walks, and programs emphasizing the natural environment. More than 130 performances were hosted at the Hatch Memorial Shell that same year, boosting the three-year attendance record from 300,000 to over 1.2 million people. Since 1983, over 200 acres were added to the Parks and Reservation system at a cost of \$11 million and 995 acres have been added to the watershed reservations at a cost of \$3 million.

Other State Agencies

There are many state, local and federal agencies throughout Massachusetts that play a significant role in the preservation of open space and the provision of outdoor recreation opportunities. Some of the state agencies included in the inventory of facilities presented in Chapter

Six include the Department of Public Works, the Housing Authority, the Water Department, the Department of Mental Health, the Department of Public Health and the Department of Corrections. These agencies and others are an integral part of the statewide planning process.

Another state agency attending to the preservation of resources, The Massachusetts Historical Commission (MHC) has already helped complete town level cultural resource assessments for 186 Bay State communities. Since 1983 it has also protected nearly 11,000 properties through listing on the National Register of Historic Places and the Massachusetts State Register. Among the MHC's major successes was the initiation of the Massachusetts Preservation Projects Fund in 1984. This fund provides matching grants to stabilize and help restore municipally-owned historic buildings in the Commonwealth. Since its inception, the MPPF has completed 108 projects, costing \$3.3 million, while saving numerous buildings considered key elements in the landscape.

A Sampling of Other Accomplishments

Effectively working to achieve our varied goals requires efforts of all the state, local, private profit and nonprofit organizations. To present an exhaustive list of these agencies and their accomplishments to preserve our heritage is a major task. We will not attempt such a feat in this document, but rather, present a sampling of a few of those efforts. Following are listed a few examples of painstaking, diligent efforts taken by individuals within the many organizations throughout the state who persevere, year after year, on behalf of the Commonwealth's environment.

Private Nonprofit Agencies. Since 1980, the Nature Conservancy has cooperated with cities, towns and state agencies to protect some 1700 acres of significant open space. Another 300 acres has been protected in new Conservancy preserves or additions to existing ones.

The Massachusetts Audubon Society has acquired more than 3,000 acres of land since 1980, bringing its total acreage to 15,061. In the summer of 1987, Massachusetts Audubon cooperated with the Boston Parks and Recreation Department to provide environmental education programs to over 2,000 children in 22 city parks. The Society sponsors the Boston Harbor Monitoring Program, a volunteer assistance program, involving 100 workers from 35 communities. These volunteers monitor the water and assist in the development of a data base which will track the harbor's progress during the monumental clean-up program.

The Appalachian Mountain Club (AMC) has protected 4,490 acres of land throughout the Commonwealth, 2,200 acres of which were acted upon since 1980. In addition, AMC provides extensive technical assistance on hiking

trails for private and public agencies, including the MDC and DEM. Since the Appalachian Trail passes through eight DEM properties in western Massachusetts, this cooperative relationship is vital to the state trails program.

The Trustees of Reservations (TTOR) and its affiliate, the Massachusetts Farm and Conservation Lands Trust, have protected over 5,000 acres through fee acquisition, conservation restrictions, and agricultural preservation restrictions since 1980. The largest private owner of conservation land in the Commonwealth, The Trustees maintains 71 properties in Massachusetts for the public.

Since 1980, over 5,000 acres of land for preservation have been purchased by the Berkshire Natural Resources Council, the Essex County Greenbelt Association, the Martha's Vineyard Conservation Society, the Nantucket Conservation Foundation and the Sudbury Valley Trustees.

Massachusetts Cities and Towns. The City of Boston has implemented its *Plan of Action, January 1987 - June 1988*, thanks to a 61 percent annual budget appropriation increase in 1987 and a 22 percent increase in 1988 . . . Another \$75.8 million budget has also been approved there for renovations of parks and recreation facilities . . . The Town of Billerica has worked in conjunction with DEM and DFWLE to acquire 21 acres within the historic Bay Circuit, at a cost of \$1,547,000 . . . Through the DCS grant program approximately \$1.9 million will help the City of Worcester restore the 1829 Rogers-Kennedy Memorial in Elm Park in one of the largest restoration projects of its kind in the country. The City continues its involvement in important projects thanks, in part, to having received \$265,000 through DEM's Olmsted Park Program, \$70,000 from the City's Block Grant Program and \$30,000 from the Massachusetts Historical Commission . . .

The Town of Amherst became the first Massachusetts municipality to create a phased-growth program encouraging specific types of development. Under



Photo by Kathryn Smith

consideration is a point-system for approving building permits which would evaluate the inclusion of affordable housing, open space and aquifer protection, while including a rolling 24-month cap on residential development . . . Recent efforts and a successful Proposition 2-1/2 override vote by the Town of Lexington gave the community the boost it needed to purchase a 104-acre golf course. This \$11 million purchase, perhaps the largest single open space acquisition by a municipality in the state, is an impressive accomplishment.

Reach Out and Touch: Communication and Information

Individual organization and agency accomplishments, as they have been presented above, are vital to resource protection and planning. Also important are achievements which enhance cooperative planning efforts among these agencies, such as improved communication and information systems. Effective and efficient planning requires an overview of all efforts, the "whole picture." A planning tool which will assist us in seeing the whole picture, as we seek to enhance our cooperative efforts, is the State Geographic Information System (GIS). Policy #4 of the 1983 SCORP document (see chapter 4), recommended the development of a comprehensive, computerized natural resource data base and information system. Since then, EOEA has invested substantial time and money developing such a system.

EOEA's specific efforts have focused on creating an ongoing data base development project (MassGIS Project). The intended result is the procurement of in-house Geographic Information System (GIS) software during fiscal year 1989. This software will be made available to all EOEA departments, and can be applied to problem-solving in a variety of fields, from open-space acquisition to public water supply protection and growth management.



Photo by Susan Wilson

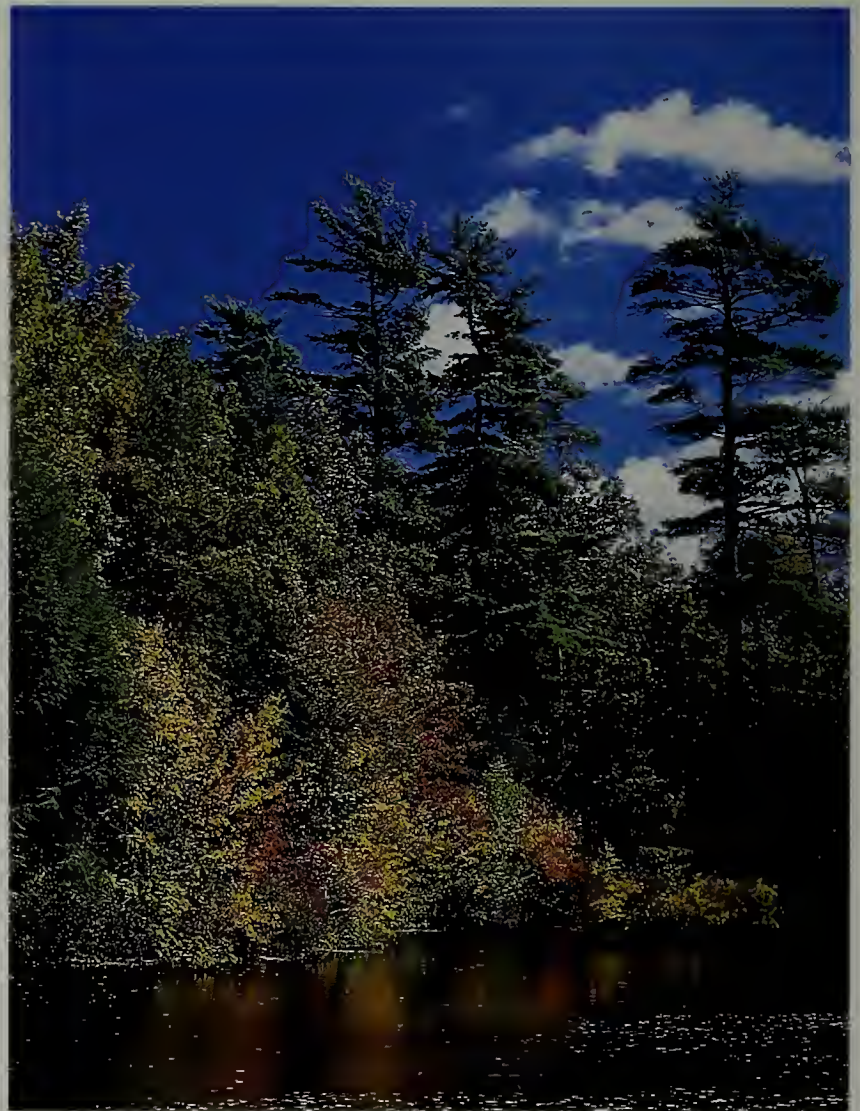


Photo by William Byrne

Anatomy of a Program: What's a GIS?

A GIS is a computerized mapping and data base management system that includes hardware, software, personnel and digital data. In a GIS, the data are organized by themes into distinct, discrete layers (Figure 2.1). A traditional map might show streams, ponds, roads and political boundaries on a single sheet. The GIS, in contrast, stores the ponds as one discrete file and political boundaries as another and roads as a third. The user can view the data one layer at a time or in any combination of layers, viewing only the political boundaries and roads, for example, or only the streams and roads, or even scanning all available data layers at once. The viewing process can either be on a standard computer monitor or in print-out form. The print-out can be in black and white or color, printed at any size.

The EOEA-supported MassGIS Project, developed as a cooperative agreement between the Hazardous Waste Facility Site Safety Council and the U.S. Geological Survey Water Resources Division, is developing the following 10 digital layers on a statewide basis:

- Political boundaries (community, county, and state)
- Hydrography (ponds, lakes, streams, bogs, etc.)
- Transportation (roads, railroads, airports)
- Drainage basins (major basin and sub-basin boundaries)
- Surficial geology (areas of sand and gravel vs. other)
- Public water supplies (well and reservoir locations)
- Waste sites (landfills, NPDES permits, salt storage, etc.)
- Public open space (state, federal and municipal)
- Land use 1971 (21 class, UMass MacConnell maps)
- Land use 1984-85 (21 class, UMass MacConnell maps)

The mapping of these features is only one aspect of the GIS. In addition, an extensive "attribute" database will be assembled which, in essence, "describes" the mapped feature. As one example, the following factors typify hypothetical attributes of a public water supply location:

Type: surface or ground water supply
 Name: water company managing facility
 Facility: name of the well or reservoir
 Amount: daily yield from that facility
 Permit #: Division of Water Supply number
 Town: town location of supply
 Town served: town(s) receiving water from supply

The attributes of linear features, such as roads, for instance, would include the name of the road and the length

of each segment. Attributes of areal or polygon features, such as the boundaries of a state park, would include the area of the polygon and the length of its perimeter. GIS software automatically calculates both the length and area of the lines and polygons on any given map.

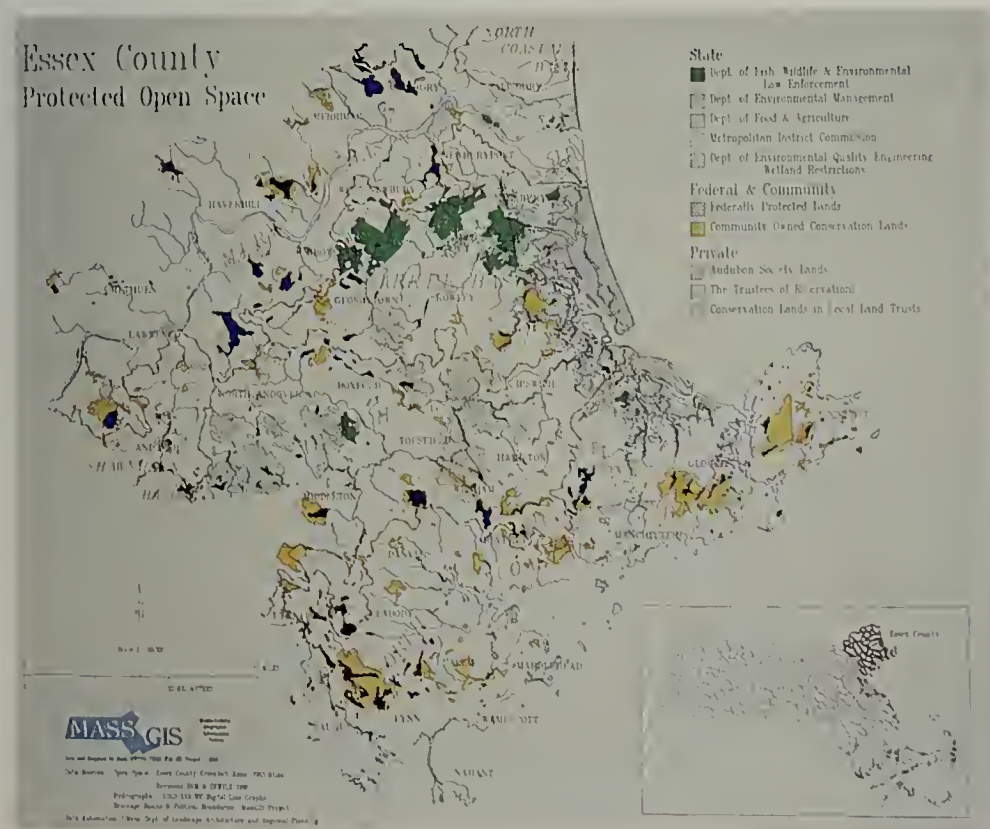
Once the GIS data base is programmed with spatial and attribute information, users can ask a variety of questions and receive timely, up-to-date responses. For example, a user could direct the computer to draw a map of the state as well as its water supplies. Next, that individual could point out a particular water supply and soon find its attribute information displayed on the screen. It could then be asked, "Where is the Jones Reservoir?" The response would be the coloring of the Jones Reservoir's polygon, enabling the viewer to distinguish it clearly from other areas.

The GIS Advantage

Why a GIS? One advantage is that it provides a central repository for mapped information - - the ultimate, up-to-date, conveniently accessible "library" for EOEA and its agencies. Users need not make dozens of phone calls, spend days tracking down data and duplicate each others efforts.

Access to data, whether it be one precise parcel of information or a complex, multi-layered map, is the most obvious advantage of the GIS. Another is that the data procured will be uniform, since all users have access to the

Figure 2.1
An Example of GIS Data Organization:
Essex County Protected Open Space



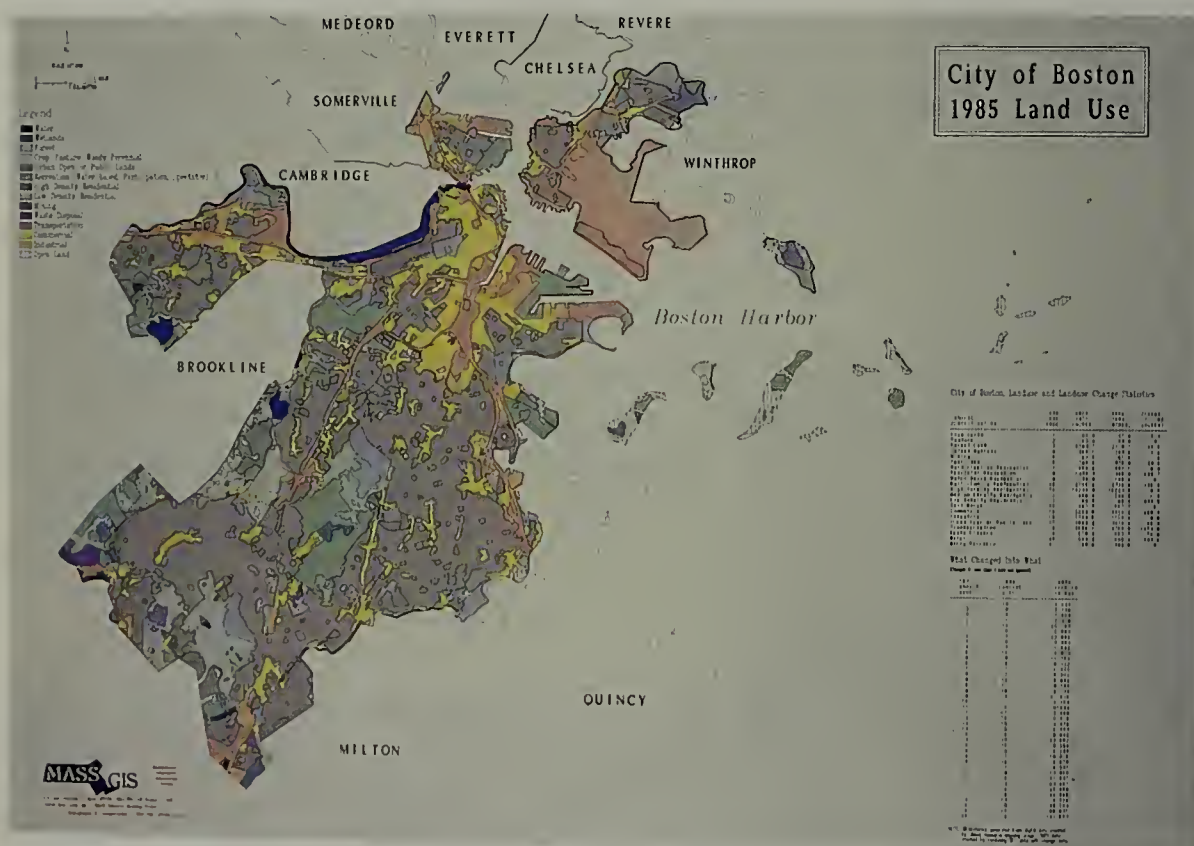
Source: MassGIS Project: USGS-WRD/HWFSSC

same copy of information. Formerly, for example, there may have been a Fisheries and Wildlife "version" of open space data that was in or out of sync with the Environmental Management version. Now there will be a single computerized version available to all. Updates and revisions can be made quickly and immediately passed on to all users thereby eliminating problems associated with out-of-date information.

What other advantages does a GIS provide? Through the GIS, agencies will be provided with much-needed tools to inventory and track data on the environment and environmental threats. Moreover, data can easily be displayed in a variety of formats. Unlike conventional mapping, with GIS, redrawing specific information for a specific area is fast and easy, providing users with virtually unlimited cut and paste capabilities to any scale. A small scale may be appropriate for report-writing while a very large scale may enhance a presentation at a public meeting.

And there's more; perhaps most importantly, a GIS offers analytic and cartographic capabilities that were unheard of with previous systems. These include the ability to perform automatic calculations of area and mapped feature lengths *combining* various data layers to form entirely new data sets. For example, users could combine zoning data with current land use information in order to locate conflicts. A GIS can also enhance data presentation in general. Case in point: traditional MacConnell land use maps were made of black and white lines that defined the extent of a given land use, with a land use code sketched into each polygon. Valuable information was included; however, due to the absence of colors, it was not possible to evaluate land areas by simply looking at the map. With a GIS, each land use, or group of land uses, can be colored differently at the touch of a few buttons. Such shading allows the user to determine patterns of land use or land use change without spending hours on tedious "coloring" (see Figure 2.2). A more in-depth description of EOE's commitment to the further development and implementation of this geographic information system can be found in Volume Two.

Figure 2.2
Sample GIS Cartographic Capabilities



Source: MassGIS Project: USGS-WRD/HWFSSC

Chapter Three

Managing Our Resources

Will you live in communities that free the mind or imprison it? Will your cities be places to thrive in or merely to escape from? And what places will there be left to escape to?

Lyndon B. Johnson



Looking Backward . . . Looking Ahead

Since the earliest days of the Crown Colony of Massachusetts Bay, management and operations of natural resources have been a concern. In the colonial period, for example, the "Province Lands" near Provincetown were managed as a state reservation. Still, despite this early consciousness, it wasn't until 1891 that the Trustees of Reservations was incorporated by the legislature for the purpose of "acquiring, holding, arranging, maintaining and opening to the public, under suitable regulations, beautiful and historic places and tracts of land..."

Only two years later, the Metropolitan Park Commission was formed and by 1896 had 2,782 acres of open space under its ownership, within the metropolitan area. This included 4,189 acres in the Blue Hills Reservation area. In 1898, the Massachusetts Forestry Association, later the Massachusetts Forest and Parks Association, was formed. This group stimulated interest in conservation while providing a base for protecting and managing public lands. During that first year, the highest mountain peak in the Commonwealth was purchased and 8,000 acres of land were preserved, saving the land from intensive logging and creating the beautiful Mt. Greylock State Reservation.

Since 1899, despite tremendous management challenges, the state has continued acquiring and managing public lands. Not surprisingly, the years during both World Wars saw conservation take a back seat to wood production for wartime materials. Nonetheless, some conservation work did continue, most notably reforestation, gypsy moth control and acquisition projects. Even during the Great Depression years, the state continued to purchase land and add staff. During the dismal 1930s, as many as 1,450 people were engaged at one time in forestry operations through programs such as the Civilian Conservation Corps. The unemployment relief funds in that decade enabled the Department of Conservation to double the size of forestry crews and to enhance management efforts for the ever-growing inventory of public lands. Following the war years, of course, public demand for outdoor recreation increased. Soon, it was necessary for management and operations to change and adapt to growing needs and heavier public use.

It wasn't until 1957 that long-range planning for the management of these resources got its first major boost. That year the state issued the first recreation master plan for the management of land, facilities, equipment and personnel. Three decades ago, staff concerns centered on the same problems as today: overcrowding, inadequate staffing, and facility development. Today, we have the added problem of the rehabilitation of older facilities.

Although funds have repeatedly been authorized for acquisition, design and development of recreational facilities, money for management and operations has been

too often overlooked. Fortunately, the 1988 \$500 million Open Space Bond includes over \$6 million for recreation facility improvements within DEM's forest and parks system. Furthermore, within the MDC Park boundaries, the rehabilitation of areas and facilities will take place at Revere Beach, Nantasket Beach, Boston Harbor Islands, Ventura State Park and Jamaica Plain's Johnson Park.

Developing the Property and Facility Managers Survey

Management and operations comprise the critical link to preserving our natural resources. In fact, it was precisely with this in mind that the SCORP Technical Advisory Committee focused its attention by forming a subcommittee which would:

- produce a yellow pages of environmental organizations and phone numbers as a reference for statewide environmental planners
- present a generic management and operations planning outline
- assist in the development of state property and facility managers' survey
- review the 1983 SCORP policies and actions to note progress and recommend changes for the 1988 SCORP based on committee findings and survey results

The yellow pages and the generic management plan mentioned above are located in Volume Two of the 1988 SCORP. These and other tools, also contained in Volume Two, were developed to assist state and local property managers in their efforts to protect resources and to provide high-quality outdoor recreation opportunities. Survey results are provided in this chapter and contribute directly to the recommendations presented in Chapter Eight.

The major purpose of the Managers' Survey was to gather information for planning and policy formation for the 1988 SCORP. A questionnaire was designed by Atlantic Research Company and distributed to property and facility managers from the MDC, DFA, DFWELE and DEM. While some agencies distributed the self-administered questionnaire by mail, others distributed surveys at monthly staff meetings. The survey was three pages in length and contained 13 questions with numerous subsections. Topics included environmental conditions, maintenance, programs and services, public awareness, facility quality, personnel management, funding priorities, volunteerism and current agency policies. The complete questionnaire is included in Volume Two.



Photo by Larry Klar

The survey was completed by 179 agency managers; 17.4 percent of the respondents were from Suffolk County, followed by 9.6 percent each from Dukes and Berkshire Counties. The remaining 63.6 percent of the respondents were from the other counties, totaling no more than 6.6 percent from any single county. Data were collected and tabulated by the staff at Atlantic Research Company.

Survey Results and Discussion

State managers must maintain areas and facilities and provide many different types of services to the public, frequently under adverse conditions. The following summarizes the extent to which managers believe the management of their particular facility is affected by some of these conditions.

Management and Operations: The Good, the Bad, and the Tolerable

For the most part, environmental conditions at agency facilities were evaluated favorably by managers (Table 3.1). While less than a majority felt that erosion, nuisance animals and historical/cultural features could be rated as *good* or *above average*, no feature was rated *bad* by more than 8 percent. While relatively little can be done to change the presence of historic/cultural features or even the presence of some nuisance animals, a number of techniques can be implemented to improve areas which are susceptible to erosion. Many erosion control projects could be completed at low cost by involving volunteers. Organizations such as the Appalachian Mountain Club may be especially willing to participate if hiking trails were to be improved or added in the process.

It is also significant that a relatively low percentage of managers reported high ratings for water and soil conditions. In both cases, problems may exist for more than 40 percent of the sites.

Table 3.1
Environmental Conditions of Sites (Percent)

Environmental Condition	Rated Good/ Above Ave.	Rated Bad
Aesthetic Appeal	71.0	0.6
Air Quality	83.5	0.6
Erosion	42.2	5.2
Health of Vegetation	61.9	0.6
Historical/Cultural	49.4	2.3
Nuisance Animals	46.6	5.2
Soil Quality	52.8	4.5
Water Quality	57.4	8.0
Water Quantity	79.0	3.4
Wildlife	65.7	1.7

Environmental Conditions Limiting Recreation and Conservation Services. Although managers did not report many situations in which environmental conditions were poor, it is important to identify those sites where difficulties do exist. Sites that serve large numbers of people may need immediate attention. Consistent with the fact that few problems were identified, it is apparent from Table 3.2 that most managers did not feel that positive recreation and conservation experiences were limited by environmental difficulties although some managers indicated that the quality and quantity of water at their sites had a limiting effect on recreation services. Little can be done to alter the quantity of water, but the water quality issue should be carefully studied.

Table 3.2
Environmental Conditions Limiting Recreation and Conservation Services (Percent)

Environmental Condition	Impact on Recreation	Impact on Conservation	Impact on Both
Aesthetic Appeal	3.9	1.1	3.4
Air Quality	5.6	1.1	2.2
Erosion	9.5	3.9	6.1
Health of Vegetation	2.8	3.4	6.1
Historical/Cultural	3.9	0.6	1.7
Nuisance Animals	3.9	2.8	1.7
Soil Quality	8.4	2.8	3.9
Water Quality	17.3	3.4	7.3
Water Quantity	16.2	1.7	2.8
Wildlife	2.8	2.8	2.8

Maintenance. Respondents were most concerned with equipment and staffing for maintenance (Table 3.3). More than 60 percent were extremely concerned about equipment and nearly three of four pointed to difficulties associated with staffing. More than one-third identified vandalism and litter as major concerns. These problems often become worse when staffing shortages occur.

Programs and Services. Many managers expressed high concern over the programs and services they provide to the

Table 3.3
Maintenance Concerns (Percent)

Maintenance Issues	Major Concern	Minor Concern
Equipment	63.3	28.8
Litter	36.6	52.6
Staffing	74.2	20.2
Vandalism	36.2	53.1

public (Table 3.4). The highest levels of concern, by a significant margin, were related to staffing, legal liability and visitor safety. In each case, more than 40 percent also reported that they were concerned about program variety and quantity, crowdedness and the problem of conflicting uses of areas and facilities. This combination of responses suggests that some managers may have inadequate staff resources to effectively provide services while protecting natural resources. This is a critical issue and should be given a high priority by EOEA and the legislature.

Table 3.4
Program and Service Issues (Percent)

Program and Services Issues	Major Concern	Minor Concern
Conflicting Use	23.1	45.0
Crowdedness	29.8	43.5
Legal Liability	52.1	32.5
Quantity	19.3	46.8
Staffing	64.1	22.4
Variety	16.3	45.3
Visitor Safety	45.6	38.0

Public Awareness. Among the issues related to *public awareness*, access for people with disabilities was identified by the greatest percent of managers (Table 3.5). Given the importance of this issue in society today, it is surprising that nearly 40 percent rated it as a minor concern. EOEA and its agencies must continue to work with the State Office of Handicapped Affairs and other organizations serving special populations, to expand accessibility of facilities and programs. Programs which increase awareness levels of facility managers are also needed to continually sensitize them to the needs of all people with disabilities.

Approximately one in four surveyed felt that emergency procedures, informational signs and the availability of on-site information for the public were major concerns. The majority indicated that these were only minor concerns. This finding, coupled with the fact that one in four managers believed that off-site promotion was *no concern* whatsoever, suggests that there is considerable variation from site to site and these differences should be identified.

Table 3.5
Public Awareness Concerns of Managers (Percent)

Public Awareness Issues	Major Concern	Minor Concern
Emergency Procedures	26.2	53.5
Handicapped Access	42.9	39.4
Information Signs	25.6	54.1
Off Site Promotion	19.9	39.8
On Site Public Info	22.7	45.3
Trail Signs	20.8	32.9

Public awareness was not an area of major concern for the majority of agency managers. In some cases, it is possible that facilities have been appropriately promoted and public awareness of these facilities is already high. On the other hand, some managers may not want public interest to be high if that would lead to increased usage of their facilities. They may prefer less use, thereby protecting resources and easing managerial responsibilities. This is a logical position for areas that may be understaffed or lacking in equipment; increased use would compound these problems. This should be pursued in discussions and during training sessions and workshops. Although not identified as major issues by a majority of facility managers, the remaining issues should also be discussed, particularly with those expressing concern. As will be evident later in this report, public awareness is, indeed, a high priority for all state agencies.

Quality of State-Owned Facilities. Respondents were asked to rate the quality of certain facilities at their sites on a 1-5 continuum where a rating of 1 indicated the least favorable level, a rating of 3 indicated an average level, and a rating of 5 the most favorable level. Although many managers reported that the quality of facilities on their sites was between *average* and *very good*, parking was the only area so rated by at least half the respondents (Table 3.6). Cooperative site visits and evaluations should be conducted to identify possible problems associated with all of these areas. Trail facilities, picnic areas and boat ramps may be in special need of attention. As will be discussed in Chapter

Seven, facilities providing opportunities for participation in these activity areas are especially important to the people of the Commonwealth.

Personnel Management. Personnel management issues were of considerable importance to the respondents. Managers' major areas of concern were seasonal hiring, career opportunities and staff training and development (Table 3.7). Nearly half saw staff morale and motivation, pay and benefits, and rewards for creative thinking as vital concerns. Between 25 and 35 percent, which represents between 45 and 62 managers, felt that being involved in planning, being informed about policy or rule changes, and staying in communication with other state agencies and with central agency staff were primary issues.

There is an opportunity to respond to managers' major concerns at relatively little cost to the state. Staff training and development programs can be developed and conducted by state employees. For those who have skills to share, their involvement can provide a form of job enrichment while others can learn a great deal from them. Short workshops and training sessions can be held so that the amount of time they require will not detract from the operations of sites and facilities. With the proper balance, it is likely that efficiency will increase and the overall effectiveness of state employees will be strengthened. A system of recognizing all improvements and changes should also be instituted. Recognition of *all* deserving individuals is more important than rewarding only the one or two *best* individuals. Systems that are competitive tend to be self-defeating.

Communications between those in the field and those who serve in administrative capacities should be increased. By identifying key problem areas and working in partnership to solve them, staff morale and effectiveness could improve significantly. Through continuous dialogue, critical needs can be identified, goals and objectives clarified, and specific courses of action agreed upon. The combination of these efforts will invariably have a positive effect on morale and motivation if approached openly and with sincerity.

Table 3.6
Facility Quality Ratings
(Percent)

Facility	1 Very Poor	2	3	4	5 Very Good	NA
Boat Ramps	3.4	9.0	14.6	15.7	4.5	52.8
Campsites	1.1	1.7	10.3	14.3	6.3	66.3
Equestrian Trails	1.1	11.4	9.7	11.4	5.7	60.8
Hiking Trails	0.6	8.5	20.5	21.6	11.9	36.9
Multiple Use Trails	0.6	8.0	18.9	20.0	7.4	45.1
Parking	5.1	7.4	25.7	32.0	25.7	4.0
Picnic Areas	1.1	1.7	22.0	23.7	16.9	34.5
Snowmobile Trails	2.3	8.0	11.4	13.6	5.7	59.1
Swimming Areas	1.7	3.4	14.7	18.6	21.5	40.1
X-Country Ski Trails	1.7	8.5	16.5	19.3	7.4	46.6

Table 3.7
Personnel Management Concerns
of State Property Managers (Percent)

Personnel Management Issues	Major Concern	Minor Concern
Career Opportunities	60.1	31.2
Communication with Central Staff	32.7	42.7
Communication with Other Agencies	24.9	53.8
Informed of Policy Changes	29.1	44.2
Involvement in Planning	35.3	50.3
Pay and Benefits	44.5	42.2
Rewards for Creativity	39.9	46.8
Seasonal Hiring	65.1	20.6
Staff Moral and Motivation	47.4	39.9
Staff Training and Development	53.2	39.2

Finally, many individuals should be involved in discussions that relate to seasonal hiring. The results of this survey do not identify the exact nature of the problem. Are seasonal employees unqualified? Is the hiring pool inadequate? Are seasonal workers not motivated because jobs lack challenge? Are they highly motivated but discouraged because they would like to work beyond the length of the season? These and other questions should be answered and a variety of remedies considered. It is possible that some of the following actions could resolve some of the difficulties: recruit heavily at high schools and colleges throughout the state; institute training programs for seasonal employees; expand the duties of seasonal workers, perhaps by having them conduct small studies at sites; attempt to hire individuals who have a strong interest in the environment; and ensure that field staff members have the authority to participate in the staff-selection process.

The specific issues of concern may not be as important as developing a *process* for addressing them. There will always be issues, concerns and problems. For an organization to be strong, there must be mechanisms in place to respond to them.

Funding Priorities. As is clear in Table 3.8, more than 76 percent of the managers placed high priority for funding on the renovation of existing facilities. This high concern puts renovation in a class by itself, followed by the nearly 44 percent who placed high importance on handicapped access. Land acquisition and the development of facilities were also identified as high priorities by approximately 40 percent, while public access and parking were high priorities for more than one in four managers. While these important issues that should be addressed on a site-by-site basis, the highest priority should be given to renovation of facilities, particularly given the high concern expressed for visitor safety. It must also be emphasized that approximately one in five managers felt handicapped access was a low priority. The reasons for this rating should be clarified.

Table 3.8
Funding Priorities of State Property Managers (Percent)

Funding Priority	Low	Mod	High	NA
Development of Facilities	24.7	34.5	36.8	4.0
Expand Active Recreation	35.8	31.8	28.4	4.0
Expand Passive Recreation	30.9	41.1	23.4	4.6
Improve Handicap Access	20.7	32.8	43.7	2.9
Improve Public Access	31.0	42.0	24.7	2.3
Increase/Improve Parking	24.3	42.8	28.9	4.0
Land Acquisition	22.6	26.6	41.2	9.6
Renovate Facilities	4.5	16.9	76.8	1.7
Strengthen Conservation	20.7	40.2	33.9	5.2

At the high end of the responses, funding for active recreation was considered to be slightly more important than for passive recreation; yet, the expansion of active recreation received a low priority by slightly more managers than expansion for passive recreation. The results related to the conservation vs. recreation dichotomy indicate a range of views and preferences. If changes are considered, a strong effort should be made to hear as many points of view as possible, particularly from those who are closest to the people and to the environment.



Photo by Susan Wilson

Volunteer Programs. Many managers seem open to working with volunteers to improve visitor services. More than half supported the idea, while less than 10 percent were definitely opposed (Table 3.9). The development of a strong volunteer program could be especially helpful for those managers who indicated they are understaffed, have problems at their sites, or simply feel that it is important to involve the public in our natural resource settings.

The use of volunteers is extensive throughout the country. While some professionals have expressed the concern that volunteers are not reliable, there are numerous examples of programs in which volunteers provide dependable, high-quality services that would otherwise not be provided.

Table 3.9
Willingness of Managers to Consider
Volunteer Programs (Percent)

Response	Percentage
Definitely Yes	24.0
Probably Yes	28.6
Probably No	37.1
Definitely No	9.7
No Response	0.6

In addition to enhancing services and facilities, many volunteer programs provide educational experiences that are not only enjoyed on a personal level but increase the number of people sensitive to important environmental issues. Developing new volunteer programs and expanding existing ones should be considered for all departments responsible managing areas, facilities and programs.

Agency Policies. Almost half of the agency managers felt that having adequate resources to implement policies was a major concern (Table 3.10). Most did not feel that policies restricted needed services. Close to 27 percent, however, believed having a voice in developing policy and developing regulations was a major concern. Roughly one in five expressed major concern over the existence of conflicting or unrealistic policies and the way in which coordinating with other organizations is implemented.

Table 3.10
Concerns Related to Selected State Policies (Percent)

Policy Issue	Major Concern	Minor Concern
Adequate Resources to Implement Policies	47.0	30.1
Conflicting or Unrealistic Policies	21.0	41.3
Coordination with Other Agencies	21.3	41.4
Policies Restrict Needed Services	14.0	39.0
Voice in Developing Policy	26.5	40.6
Voice in Developing Regulations	22.2	48.0



Photo by Pamela Bailey

In general, there are good reasons for the evolution of policies; however, they can also be barriers to effectiveness if the rationales underlying them are not understood and accepted throughout the structure of large organizations. Responses to policy items present another opportunity for entering into dialogue with state site managers.

Conservation vs. Recreation. Most sites were classified by respondents as recreation or recreation/conservation sites. Slightly more than 20 percent of the sites were identified as primarily conservation areas (Table 3.11). Respondents' perceptions of the *real* and the *ideal* balance between recreation and conservation at the various sites were fairly congruent although some managers expressed a preference in favor of conservation. However, only 14 percent of all managers felt that sites should be limited to conservation and *only* conservation.

Table 3.11
Managers Views of Actual and Preferred Emphasis on
Recreation or Conservation at State Sites (Percent)

	Conservation			Recreation		
	All	Mostly	Equal	Mostly	All	NA
Emphasis Is:	10.8	10.8	27.7	16.9	33.1	0.7
Emphasis Should Be:	13.8	10.6	40.6	11.3	23.1	0.6

Management and Operations Recommendations

Although the subcommittee and research team found pockets of concerns around the state, most of these concerns seem to be related to individual sites rather than to the state as a whole. Nonetheless, personnel management; staff communications; funding for staff, equipment and facilities; expanding access for those with disabilities and strengthening volunteer programming should be given immediate attention.

Personnel Management and Communication

It was no surprise that classic management issues like staffing, safety and equipment repeatedly surfaced in the course of the survey. Accordingly, site managers should be encouraged to meet with each other and with their supervisors for on-going problem-solving dialogues. Managers should be given the opportunity to freely discuss the inherent problems of seasonal hiring practices, staffing, safety, equipment, etc., with potential solutions pursued at the department level. The focus for these dialogues should be geared toward innovation by seeking new ways to approach old problems.

Funding for Staff, Equipment and Facilities

Equipment and staffing were cited the most frequently by managers as major areas of concern. The obvious corollary is that agencies should review current annual budget deficiencies, seeking more funding for staffing and equipment maintenance. In addition, the Executive Office of Environmental Affairs should support these efforts yearly to ensure the long-range protection of our investments.

In the opinion of state property managers, agencies need to place a high priority on renovating existing facilities. While the 1988 Capital Outlay does provide funding to renovate facilities in DEM and MDC operated sites, funding for facility renovations should be included in the annual operating budget rather than on an irregular basis. Although the conditions of facilities at most sites were not placed in the category of "major problem" status, continuous funding is necessary to avoid future problems.

Responding to Those with Disabilities

Access for people with disabilities was considered the single greatest public awareness issue, according to the managers surveyed. In general, EOEA agencies are advised to work in tandem with the Office of Handicapped Affairs and other statewide organizations to develop and promote



Photo by Lauren Meier

accessible facilities, programs and activities. Although some agencies have made good progress in providing access for people with disabilities, most agencies have done little to implement the SCORP recommendations presented in the 1983 plan.

The issue of handicapped access must be addressed more fully. Site analyses should be conducted to identify levels of access, managers must be involved in changes that improve accessibility, and accessible facilities must be more actively promoted. This is particularly important in the more urban areas where the number of individuals with disabilities is greatest. It is also important to emphasize that as life expectancy increases in this country, the number of elderly people who may be in need of accessible facilities will continue to grow as well. It is clear that accessibility in terms of areas, facilities and programs must continue to be given a high priority at our state sites.

All agencies should act immediately to implement the 1988-90 actions presented in Volume Two. Agencies may want to develop a process similar to the Department of Environmental Management's Access Committee to: (1) evaluate agency progress in implementing SCORP recommendations, (2) evaluate progress in providing access and in publicizing the availability of programs and services, (3) develop a plan for providing or enhancing accessible facilities and services in the areas of most need and (4) promote the exchange of information and ideas among the agencies and with professionals working in the field.

Gaining Strength with Volunteers

Volunteer programs should be expanded or newly developed. An effective volunteer program may aid in addressing many of the issues which have been identified as concerns among managers while providing important educational opportunities for those who become involved in this important aspect of preserving and protecting our valued natural resources.



Photo by Susan Wilson

Summary of Major Areas of Concern

A summary of selected issues which were of major concern to managers is presented in Table 3.12. Issues were included which were expressed as major concerns by at least 40 percent of all respondents.

Table 3.12
Major Concerns for at least
40 Percent of Respondents (Percent)

Issue	Percent Major Concern
Maintenance	
Equipment	63.3
Staffing	74.2
Program and Services	
Legal Liability	52.1
Staffing	64.1
Visitor Safety	45.6
Public Awareness	
Handicapped Access	42.9
Personnel Management	
Career Opportunities	60.1
Pay and Benefits	44.5
Seasonal Hiring	65.1
Staff Morale and Motivation	47.4
Staff Training and Development	53.2
Current Policies	
Adequate Resources to Implement Policy	47.0

Public Education and Information: Knowledge to the People

"What do the simple folk do?" queried Gueneviere and King Arthur, in their jocular, tongue-in-cheek musical number from "Camelot." The royal couples' answer proved alarmingly straightforward: "They sit around and wonder what royal folk do; yes, that's what simple folk do!"

Granted, the Commonwealth is more than two centennial celebrations beyond the days of "royalty" and "commoners." But the point made in Arthur's song has valid contemporary applications: what does the Massachusetts public know about the state? How have we, and how can we provide useful information to them? What are the public's concerns and how can these concerns be effectively addressed by EOEA and its agencies?

Public Education and Information Subcommittee Work

Although not identified as a major concern by the state property and facility managers in the survey results presented above, public information is certainly important, as will be apparent with the presentation of other findings. Realizing that this would inevitably be the case, the Technical Advisory Committee decided to take a closer look at EOEA agency public information programs and offer recommendations based on insights gained from a survey of agency Public Information Directors.

Surveying Public Information Directors. The TAC directed its survey to information directors within EOEA agencies. Answers discussed here came from eight participating agencies. The responses included a broad variety of approaches designed to obtain responses from the public. Among all agencies, the Department of Food and Agriculture offered the most highly developed public relations campaign in the form of a call-in radio show. This provides a highly useful model for other agencies.

Five of the eight agencies published brochures, while an equal number printed newsletters. Despite these efforts, rarely was a consistent, bold approach used to capture the



Photo by Mark Finnen



Photo by Mark Firren

public imagination. For example, one agency director explained that by the time members of the public knew about and requested brochures, the brochures were often already gone. Newsletters, on the other hand, were found to be directed to a mailing list of organizations, but not to private citizens.

In all, there were several positive model programs which experienced some degree of success in reaching and involving the public. Some of these included the fee-based Wildlife Magazine, published by DFWELE, the DFA radio show that includes a call-in question and answer period, and point-of-purchase distributions by DFA.

Coordinating and Distributing Information

Fact: The public does not always know where to turn for information on open space, recreation and environmental matters. **Fact:** The public is generally unaware of the jurisdictions of the various EOEA agencies.

The results? Wasted investments for both the public and EOEA. First, the public loses benefits. Unaware of the opportunities created for them by environmental agencies, people take less advantage of these opportunities. Second,

governmental programs are less efficient with an uninformed public. Unaware of natural and cultural resources, their condition, how the government protects them and how this affects peoples' daily lives, the public is more likely to misuse - - or not use - - these same resources.

The public is doubly frustrated by dealing with government agencies, which often appear to be no more than a maze of bureaucracies. The public is not alone, moreover, in confusing the jurisdictions of varied agencies; many agency employees share the same confusion!

One example related to water-based programs can be seen in the following: although hunting and fishing licenses are obtained through DFWELE, many fishing and hunting areas are operated by DEM, MDC, DFWELE and DEQE. All of these agencies have water-based programs, from rivers and streams, to lakes and underground water supplies. The new MWRA, unintentionally, has only added to the confusion.

It is essential to emphasize that these types of difficulties are not unique to Massachusetts; citizens throughout the nation frequently have difficulty interpreting bureaucratic systems and understanding how to obtain services to meet their particular needs. Nonetheless, it is important to

recognize the problem and to develop measures to minimize difficulties. This may be particularly true for special population groups. For example, although we are aware of the physical barriers that prevent people with disabilities from participating at recreational facilities and in programs, we are also discovering that a lack of information can act as a major barrier, as well. For example, informational barriers might be created when publications used by sight- and hearing-impaired populations are not developed with their impairments in mind, publications that ideally would indicate locations of barrier-free sites, or suggest sites which offer special interpretive programs.



Photo by Susan Wilson

Coordinating and Providing Technical Assistance

It's no surprise that municipalities also suffer from the same syndrome. Even EOEA employees are often unaware of programs in agencies other than their own. Municipal officials have myriad responsibilities; can they also be expected to know where to seek technical assistance for their open space and recreation problems?

A typical scenario is as follows: open space planning assistance may be obtained through certain DEM programs, and Cooperative Extension's Community and Resource Development Program at the University of Massachusetts. Still, DCS is the EOEA agency that works with communities to develop open space plans as a prerequisite to applying for federal Land and Water Conservation Funds and other self-help grant programs. Although DCS provides some planning assistance to communities through its District Conservation offices, the public is still confused regarding exactly what is available and exactly which agency can best meet its needs.

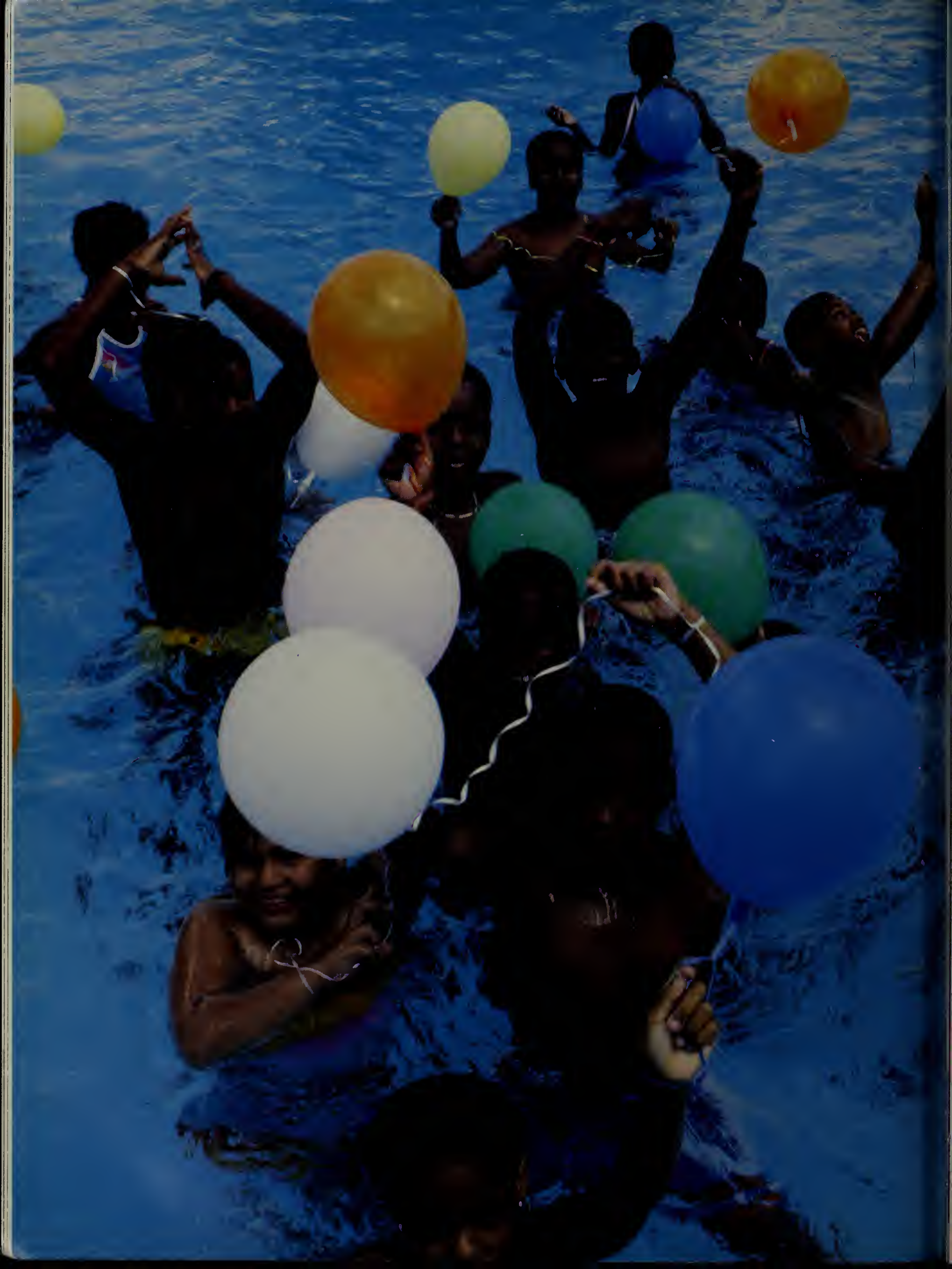
Based on the findings presented in this section, the subcommittee has developed a series of recommendations and actions which are included in Volume Two, the Action Plan and Workbook. These recommendations include the establishment of an EOEA Technical Assistance Office to coordinate all agency technical assistance efforts, directly assisting citizens and municipal officials work through the maze of agencies and programs.

Chapter Four

Our Cities and Towns

For crowded populations to live in health and happiness, they must have space for air, for light, for exercise, for rest, and for the enjoyment of that peaceful beauty of nature which . . . is so refreshing to the . . . souls of townspeople.

Charles Elliot



Past as Prologue

Municipal Recreation

As we plan for the future, focusing on our cities and towns, it is encouraging to note that the municipalities of the Bay State boast a lengthy list of historical "firsts." Among them was the 1885 opening of Boston's "Sand Garden," a supervised play area for children, celebrated as the beginning of America's recreation movement. Yes, other related events had preceded the sand garden's formal opening: in 1853 land had been purchased for what later became known as Manhattan's Central Park; Boston's Old First Church opened the first vacation school in 1866; an 1867 acquisition of dunes and marshland would later be San Francisco's Golden Gate Park; and land was even bought in Brookline during 1872 for eventual use as playgrounds. But it was the success of the Boston "Sand Garden" that was pivotal in establishing the validity of municipal outdoor recreation planning, as evidenced by the Boston City Council's 1899 decision to put \$3,000 into meeting the new program's cost. The Commonwealth and her communities had officially acknowledged recreation as a basic human need.

Municipal Planning

Since the turn of the century, Massachusetts has been actively involved in municipal planning. As early as 1907, towns could establish boards of survey; cities earned the same right in 1916. By 1913 planning boards were studying the "resources, possibilities and needs of the municipality." In 1936, those boards found their responsibilities expanded: master planning would henceforth include all municipal planning functions - - jurisdiction over sites like public parks, playgrounds, building sites, pierhead and bulkhead lines, and waterways. Conservation areas could be designated, and development directed, with the "public good" in mind.

While planning and providing services is a responsibility shared by state, local and private organizations, the fact is that most day-to-day, community actions fall directly on the shoulders of local officials. Most obvious among these responsibilities are police, education and fire protection. Perhaps less obvious are municipal obligations to protect the environment, provide outdoor recreational opportunities and, in many cases, to acquire land for playgrounds, parks and conservation areas, or provide urban recreation, especially for lower income residents.

Municipal officials must often tackle large jobs such as acquiring land and levying taxes. They are also the ones who, on a daily basis, must consider all ages, all races, all special needs. They are the rock, the permanence, in a society with continuously changing needs.



Photo by Julie Stone

Though cooperative planning has never been an easy venture, state officials realize that inclusion and consideration of municipal issues and efforts is essential. Municipal facilities, such as local parks, tot lots, community centers and outdoor structures, are often more intensely used than regional facilities because of their proximity to urban areas. Intense use translates into a draining of resources and funds, and the need for help from an array of organizations.

State and Local Links

State and local governments have a vital partnership, and a shared commitment to a vision of excellence and the challenges of cooperation. Both of these teams are made up of citizens of the Commonwealth. Both, too, have to face the pressures of rapid technological growth and ever-growing populations. On the one hand, they share the exciting responsibility of accommodating increased needs for outdoor recreation possibilities and conservation of our natural and cultural resources. On the other hand, they constantly must address environmental threats resulting from technology and the population boom: pollution, undrinkable water, hazardous waste and other dismal challenges. Some communities are able to plan for development and direct growth, while others can only react as changes occur. But whatever the situation, cooperative

planning to conserve our natural and cultural resources while providing opportunities for outdoor recreation is essential.

As the process began for creating the 1988 SCORP, it became clear that municipal concerns were indeed a high priority. For example, of the nearly 11,000 open space and outdoor recreation sites inventoried this year, more than 7000, nearly 66 percent, are owned, operated or managed by local authority. Thus, the ability of local governments to respond to the growing demand for outdoor recreation opportunities and resource preservation is so critical that municipal concerns must be considered in the statewide planning process.

To understand local problems and concerns more fully, the Commonwealth surveyed all 351 cities and towns. This survey has aided in formulating state policies that actively consider local issues and concerns. A copy of the municipal survey is included in Volume Two of this report. Volume Two also includes more information about recreation and conservation agencies in the Commonwealth, additional tables derived from the supply and demand studies, and a description of how municipal and state officials may gain access to the SCORP data sets that are maintained at the EOEA Data Center.

This chapter discusses the issues which were of greatest concern to municipal respondents in the Commonwealth. It is hoped that through legislation and the development of statewide policies, local officials will be empowered to more effectively address local issues within their respective communities.

The Municipal Challenge

Municipalities were already battling for funds to provide recreation, park and conservation services. To make matters worse, they were hit with losses on the left and the right: on the one hand, federal aid to municipalities had declined; on the other, the passage of Proposition 2-1/2 in 1980 limited the amount of property taxes local governments could collect in any one year. Municipalities found themselves scraping for funds to provide such basic services as education, police and fire protection. Inevitably, when budgets were cut, money earmarked for recreation agencies was the first to go.

Added to the fiscal constraints of the 1980s, communities have been faced with development pressures brought on by shifting population patterns. Between 1970 and 1980, Massachusetts' total population grew by less than one percent. Nevertheless, the Commonwealth experienced a veritable surge of population from urban to rural areas: some urban areas like Brookline/Boston decreased as much as 11.7 percent, while other areas, especially sectors in the

Southeast, simultaneously expanded by as much as 18 percent. Meanwhile, certain portions of the state have been pressed by surges from New York City, by way of Connecticut. The Berkshires in particular have experienced an influx of weekend and summertime residents. The impact of these population shifts on the environment were predictable: the overcrowding of recreation facilities, threats to water supplies, and the irrevocable loss of scenic and cultural landscapes.

Municipal programming of recreation activities has improved greatly over the past decade. But there's been a "catch-22;" while the demand for recreation activities has grown dramatically, the expense of operating and maintaining these facilities has increased, and the available funds decreased. Hence, state agencies in Massachusetts are becoming increasingly concerned with helping communities undertake more extensive conservation and recreation programs. State officials appreciate and fully realize the crucial role municipalities play in protecting the Commonwealth's natural and cultural heritage — and that the success or failure of cities and towns will largely determine the character of the state in future years.

Recent statewide initiatives, such as those developed by the Senate Ways and Means Committee's Agenda 90 Committee, chaired by Paul Tsongas, and those presented in Lieutenant Governor Evelyn Murphy's Blueprint 2000, have questioned the state's efficacy in meeting today's environmental challenges thereby ensuring a desirable future for Massachusetts. Can the state help communities balance the goals of environmental protection with the seemingly conflicting goals of social progress and economic development? Can state decision makers respond to differences among the communities, differences in growth patterns, regions, socio-economic make-up or fiscal constraints, and modify their policies and funding programs accordingly? In light of these questions and initiatives, the SCORP planning team sought to gather information specific to municipal concerns. This information will enhance state and local officials' efforts in making informed decisions regarding local open space and recreation policy.

This phase of the planning process focused primarily on the state as a whole and relationships between (1) urban character and (2) growth rates in relation to how effectively municipalities have been able to address local recreation and conservation issues. The survey was completed by a variety of community-based individuals familiar with recreation and conservation services in their own communities. The response rate was 61.8 percent, or 217 of the Bay State's 351 cities and towns. Most respondents were recreation directors, recreation or park commissioners, administrative assistants to town or city managers, or members of their community conservation commissions.

Regional analyses are limited since the decision was made after the completion of the municipal study to alter the five-region model used in the 1983 SCORP to the more sensitive, seven-region configuration adopted for the supply and demand phases of this study. Interestingly, the analyses did not reveal many significant differences among the five regions; however, those which emerged will be presented in the context of the following configuration of regions: (1) Southeastern Massachusetts, the Cape and Islands, (2) Northeastern Massachusetts and Metropolitan Boston, (3) Worcester County, (4) Hampden, Hampshire and Franklin Counties and (5) Berkshire County.

Municipal Survey Results

Municipal officials responding to the survey were asked to assess the importance of 20 issues related to recreation, parks and conservation and the extent to which, in their opinions, the issues were being effectively addressed in their communities. Responses are reported in Figures 4.1, 4.2 and 4.3. The two most commonly identified issues centered on the acquisition and protection of land and water supplies. Most communities also stressed the importance of preserving land for recreation, open space conservation, and the protection of wetlands. Water supply, however, emerged as one of the most critical issues and was cited as the area in greatest need of state funding.

Acquisition, Conservation and Beyond

More than 90 percent of the respondents were concerned with the acquisition and protection of wetlands, acquisition and protection of conservation and recreation areas, and the development and expansion of outdoor recreation facilities. Other issues of concern were the acquisition and protection of water supplies, maintenance of recreation facilities, liability insurance problems, provision of water-based recreation opportunities, accessibility to recreation areas and programs for people with disabilities, outdoor recreation day-care programs, the expansion and development of trail corridors and management of off-road vehicles.



Photo by Mark Finner

Figure 4.1
Acquisition and Protection of Resources

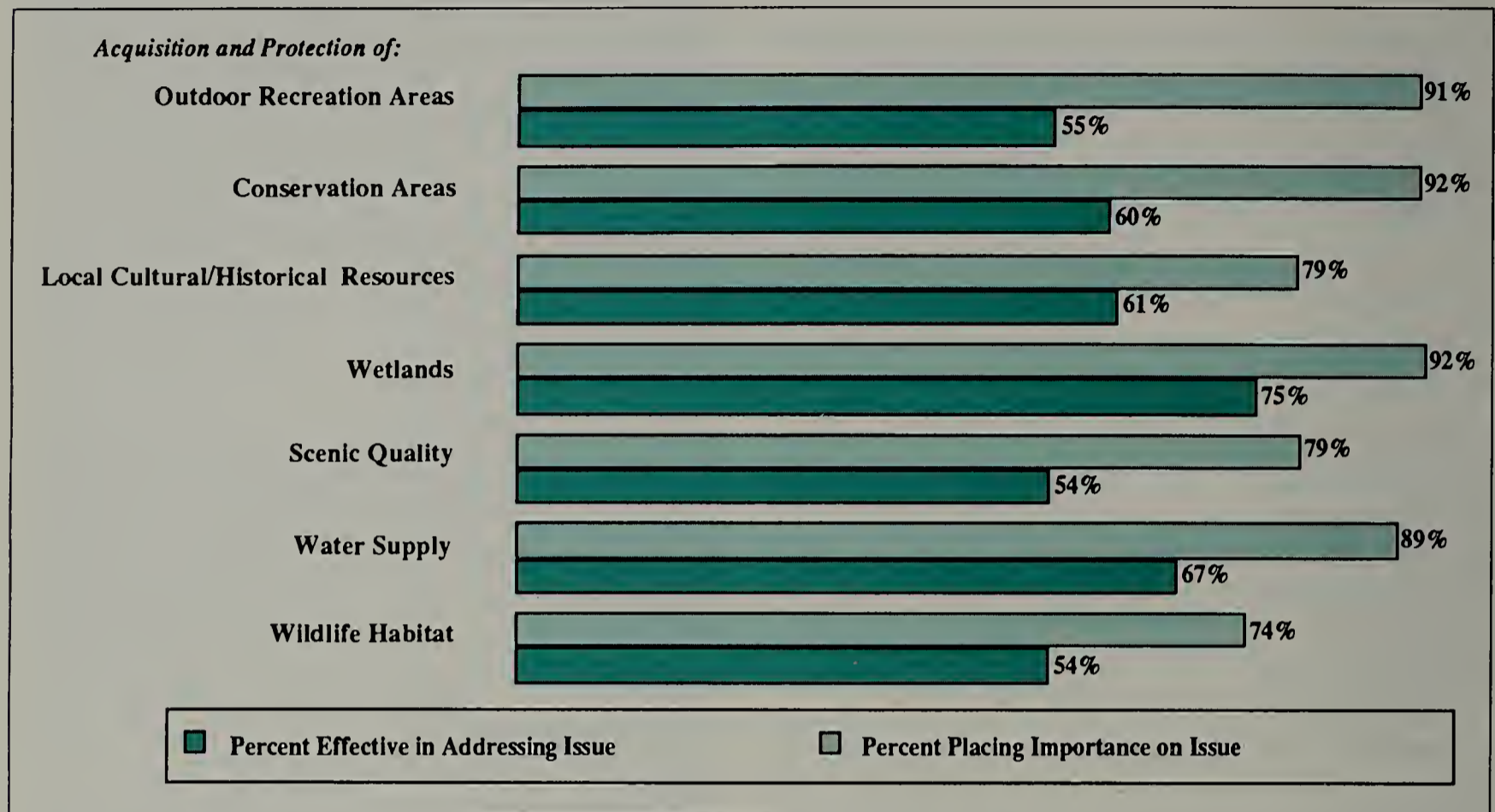
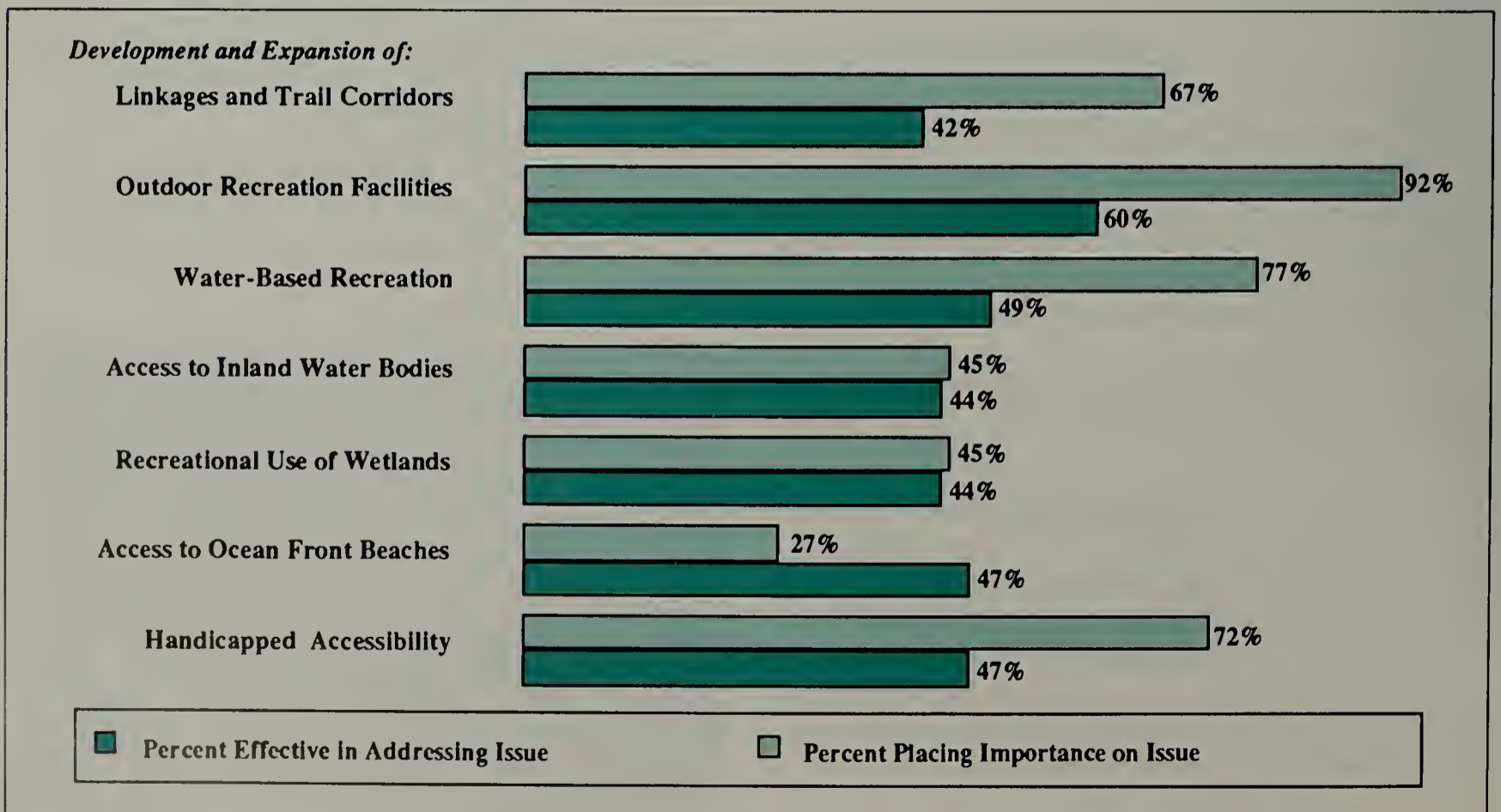


Figure 4.2
Development and Expansion of Resources



Fourteen of the twenty recreation and conservation issues were found to be important to a majority of respondents. When asked to judge whether their communities were effectively addressing each of the issues, more than half reported effectiveness for 15 of the 20 that were rated important or extremely important by the majority.

For which five issues was effectiveness felt to be lacking? They were (1) development and expansion of trail corridors, (2) development and expansion of water-based recreation, (3) development of facilities accessible to people with disabilities, (4) management of off-road vehicles and (5) provision of outdoor recreation day-care programs. In all cases, the percentage of communities rating the issues as important or extremely important was greater than the percentage expressing effectiveness in addressing the issues. It is also significant that during the statewide public hearings, topics of major interest were trail activities, water-based activities, off-road vehicle use and access for people with disabilities.

The largest gaps between importance and effectiveness were found in the areas of (1) acquisition and protection of recreation areas, (2) maintenance of recreation facilities, (3) development and expansion of recreation facilities and (4) acquisition and protection of conservation areas and open space. Thus, many respondents reported that their communities were ineffective in addressing a number of highly important issues.

Population and Growth Rate

Community Size. For planning purposes, it is not only important to examine the state as a whole and its various geographic regions, but it is also helpful to identify differences that may exist among communities which vary in the sizes of their populations. Communities were categorized on a continuum ranging from rural to urban and are listed by category in Volume Two. The categories and their population ranges are as follows:

Rural: communities with population densities less than 243 people per square mile.

Rural/

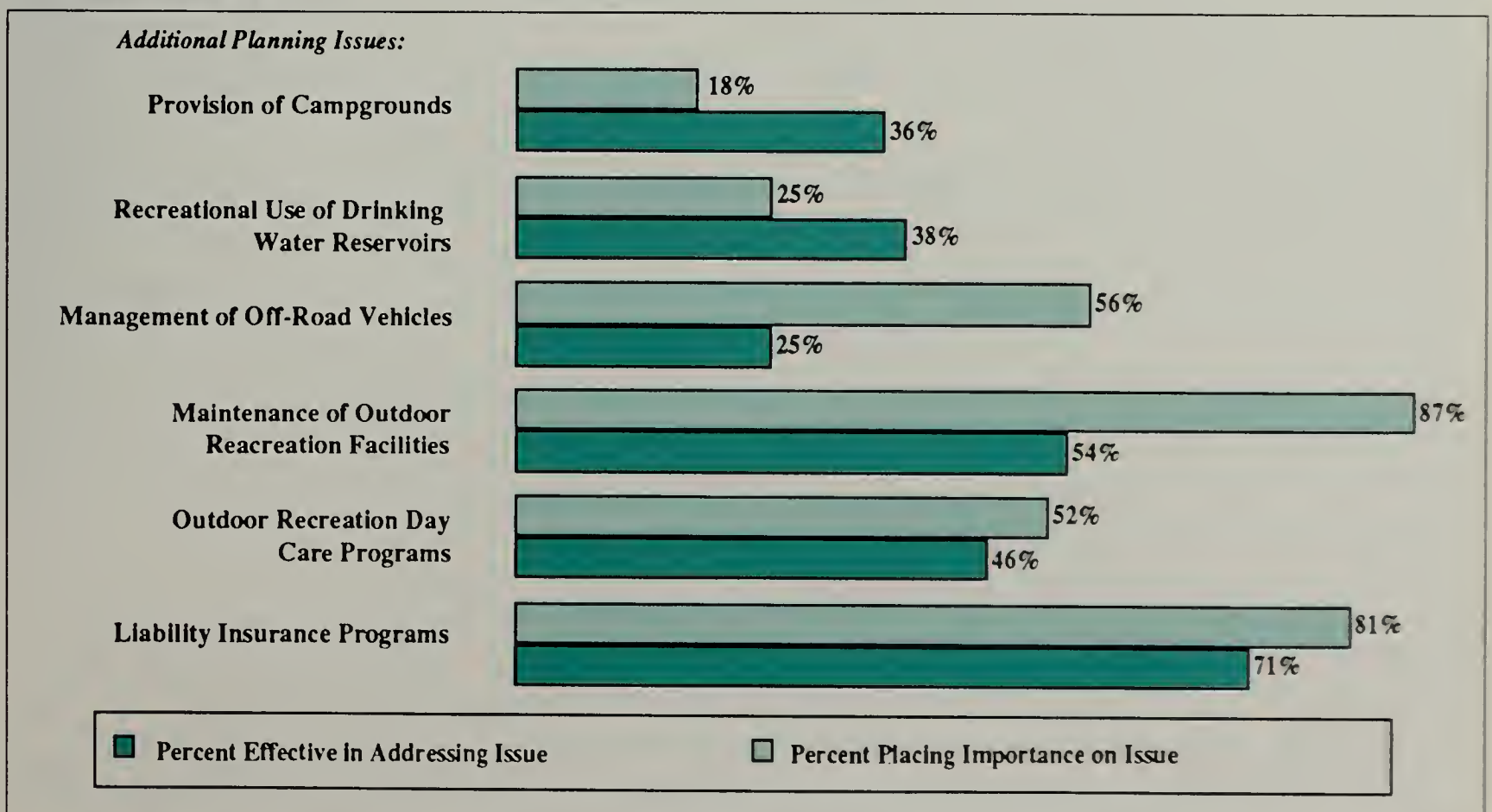
Suburban: communities with population densities greater than 243 people per square but no more than 1,000 people per square mile

Suburban: communities with population densities greater than 1,000 people per square mile but no more than a total population of 35,000 people or communities that are 90 percent sewered.

Urban: communities with greater than 35,000 people and more than 90 percent sewered.

For nine of the 20 specific recreation and conservation issues, the level of importance placed on issues varied significantly among respondents from rural and urban

Figure 4.3
Additional Planning Issues



communities (Table 4.1). Both urban and suburban respondents consistently rated acquisition and protection of recreation areas, development and expansion of recreation facilities, maintenance of outdoor recreation facilities, provision of recreation programs and development of handicapped access as more important than did their rural counterparts. Suburban respondents in particular rated the first four of these issues as extremely important.

Significance levels have been reported in Tables 4.1 and 4.2 to indicate the probability that the reported differences between groups may have occurred by chance. The smaller the figure reported under the column, *significance level*, the smaller the probability that differences did, in fact, occur by chance.

In contrast, respondents from more rural areas were slightly more concerned with acquisition and protection of water supply than were those in urban settings; 88 percent of the rural/suburban respondents rated this issue as extremely important, compared to 60 percent of those from the suburban/urban categories. Rural respondents were also more concerned with management of off-road vehicles.

The key issue for rural/suburban and suburban respondents was the development and expansion of water-

based recreation facilities; 88 and 83 percent of these groups, respectively, rated the issue as important or extremely important.

Finally, urban respondents placed high importance on developing and expanding the recreational use of wetlands. Although concern with this issue was generally rated low on a statewide basis, the use of wetland areas for certain types of recreation activities may be particularly appropriate in urban areas where the availability of open spaces is limited.

Three of the issues were found to differ among community types in terms of various communities' abilities to address recreation and conservation issues in the following ways: (1) according to respondents' perceptions, urban communities were more effective than others in acquiring and protecting conservation areas with almost 50 percent of the rural and suburban respondents reporting ineffectiveness in this area; (2) although most respondents felt they were effectively addressing the protection of water supplies, effectiveness declined as communities became more rural and less urban; (3) urban communities were more effective in providing access for people with disabilities and (4) such access was identified as less of an issue in more rural areas.

Table 4.1
Perceived Importance of Outdoor Recreation and
Conservation Issues by Community Size (Percent)

Issues	Rural	Slightly Suburban	Suburban	Urban	Significance Level
<i>Acquisition and Protection of:</i>					
Conservation Areas	88.2	92.4	93.1	95.4	.85
Local Cultural/Historical Resources	78.2	76.8	82.7	86.4	.19
Outdoor Recreation Areas	84.1	92.0	100.0	100.0	.001
Scenic Areas	80.9	78.8	81.5	72.7	.91
Water Supply	85.9	95.6	85.7	77.3	.001
Wetlands	69.8	75.9	76.9	81.0	.71
Wildlife Habitat	78.6	76.1	71.4	52.4	.40
<i>Development/Expansion of:</i>					
Access to Oceanfront Beaches	16.2	30.3	25.0	45.0	.06
Handicapped Access	56.9	73.8	89.3	90.9	.001
Linking of Trail Corridors	53.9	74.8	76.6	61.9	.05
Outdoor Recreation Facilities	82.1	94.6	100.0	100.0	.001
Recreational Use of Wetlands	31.8	52.8	44.8	54.5	.001
Water-Based Recreation	61.2	87.8	83.3	72.8	.001
<i>Additional Planning Issues:</i>					
Liability Insurance Coverage	76.5	80.7	89.6	85.7	.66
Maintenance of Outdoor Recreation Facilities	72.7	95.5	93.3	90.9	.001
Management of RVs	63.6	62.9	44.0	18.1	.004
Outdoor Recreation Day Care Programs	31.7	57.4	66.6	68.2	.01
Provision of Campgrounds	22.7	15.3	22.0	4.5	.39
Recreational Use of Drinking Water Reservoirs	18.5	28.1	25.0	28.5	.54

Table 4.2
Perceived Effectiveness in Addressing Outdoor Recreation
and Conservation Issues by Community Size (Percent)

Issues	Rural	Slightly Suburban	Suburban	Urban	Significance Level
<i>Acquisition and Protection of:</i>					
Conservation Areas	51.6	62.7	53.8	85.7	.04
Local Cultural/Historical Resources	50.9	66.2	64.0	66.7	.31
Outdoor Recreation Areas	53.0	58.0	39.3	72.7	.11
Scenic Areas	51.7	52.7	47.8	70.6	.50
Water Supply	57.6	65.4	79.2	89.5	.04
Wetlands	92.9	92.4	89.7	90.5	.89
Wildlife Habitat	57.4	47.9	54.5	66.7	.50
<i>Development/Expansion of:</i>					
Access to Oceanfront Beaches	35.5	43.2	38.5	42.9	.91
Handicapped Access	29.4	47.1	59.1	75.0	.001
Linking of Trail Corridors	44.2	40.3	33.3	56.3	.50
Outdoor Recreation Facilities	50.0	59.2	63.0	81.8	.08
Recreational Use of Wetlands	43.2	49.1	33.1	42.9	.69
Water-Based Recreation	40.0	50.7	56.5	58.8	.39
<i>Additional Planning Issues:</i>					
Liability Insurance Coverage	62.0	76.3	73.9	72.2	.41
Maintenance of Outdoor Recreation Facilities	44.6	55.8	51.7	73.7	.17
Management of RVs	22.0	31.8	10.5	22.2	.26
Outdoor Recreation Day Care Programs	37.5	50.9	45.0	50.0	.61
Provision of Campgrounds	50.0	34.0	16.7	18.2	.04
Recreational Use of Drinking Water Reservoirs	43.2	37.7	26.7	36.4	.73

Growth Rate and Survey Responses. No strong relationship was found between growth rate and the importance of issues, nor between growth rate and the perceived ability of communities to address them. On the other hand, growth rate and urban influence were negatively correlated; rural communities substantially dominated the highest growth group (Table 4.3). Significant regional differences were also found; the highest rates were found in the Southeastern region, with lower growth rates centered in the Boston Metropolitan and North Shore Areas.

Slightly more respondents in the high-growth group felt their communities were not effectively addressing water supply protection and the expansion of recreation facilities. Although differences were small, respondents within high-growth communities tended to rate acquisition and protection of scenic areas as somewhat more important than did those in other communities. It should also be pointed out that compared to respondents in other regions, a smaller percentage of respondents in Worcester County felt that their communities had been effective in acquiring and protecting recreation areas.

Several issues were of particular importance to respondents. For the state as a whole, several needs were expressed with regard to trails, i.e., the need for

Table 4.3
The Relationship between
Growth Rate and Urban Character

Town Type		Growth Rate			Total
		Lowest 20(%)	Middle 60(%)	Highest 20(%)	
Rural	N (%)	14 (32.6)	33 (25.8)	25 (54.3)	72 (33.2)
Rural / Suburban	N (%)	10 (23.3)	66 (51.6)	17 (37.0)	93 (42.9)
Suburban	N (%)	11 (25.6)	16 (12.5)	3 (6.5)	30 (13.8)
Urban	N (%)	8 (18.6)	13 (10.2)	1 (2.2)	22 (10.1)
Column Totals	N (%)	43 (19.8)	128 (59.0)	46 (21.2)	217 (100.0)

Chi-Square = 26.98, df = 6, p = .0001

(1) increased funds, (2) increased staff and (3) increased coordination/planning. More than one in five respondents indicated that they had no trails within their communities which is not consistent with inventory findings. This suggests that many local officials may not be aware of the existence of these important natural and recreational resources within their cities and towns.

Proposition 2-1/2

Municipal officials have long recognized the need to provide open space as well as recreation services. Throughout the Commonwealth local officials have worked closely with community organizations to provide programs, services, lands and facilities to meet the changing needs of their citizens. Yet, these programs, services and facilities cost money and administrators with deep, ongoing concerns for addressing these needs are invariably faced with the issue, where will the money come from? Under normal conditions, budgeting for these services can be difficult enough; in the face of tax-limiting legislation, it can be virtually impossible for some communities.

Weathering the Storm. Following the financial problems of the 1970s, Proposition 2-1/2 was passed, which placed a cap on property taxes. The enactment of this tax-limiting legislation has apparently aided the economic recovery of the Commonwealth; however, there were also accompanying costs. For example, as noted in a report from the City of Boston, "Proposition 2-1/2, and its resultant decrease of city dollars, caused a marked decrease in the budget of the Parks and Recreation Department. This decrease in budget led to the depletion of the work force, curtailing programming almost completely."

Since before 1987, the Boston Parks and Recreation Department has had to rely heavily on the collection of nominal fees, controlled by city council action, to provide many of its programs. The gap between the very poor and the rest of the community, of course, is unusually acute here, if only because of sheer numbers and the intense competition for dollars to be allocated for housing,

education, health and transportation, as well as for recreation services, parks and libraries.

Some cities and towns have been able to adjust to the effects of the property tax limitations or have sought Proposition 2-1/2 overrides. Others have few resources and have been unable to respond to their growing concerns. Although not a typical Massachusetts community, recently, the City of Boston has had reason for optimism. It doubled its operating budget in 1987, and substantially increased it again in 1988. It is presently working on year four of a five-year, \$99 million capital program to improve playground facilities and structures. State funds of \$10 million will be used to plan and implement work in five Olmsted-designed parks of the Emerald Necklace. A preliminary City and Town Commons Program application for the rehabilitation of the pathway system of the Boston Common is being considered by DEM. Through the Urban Self-Help grant program, the city of Boston was awarded ten grants totaling more than \$4 million. Miscellaneous grants for the study of water quality issues have also been accepted and private trust funds will finance over \$1 million in capital improvements, while public/private collaborations will contribute significant amounts in Copley and Post Office Squares, and the historic cemetery known as the Granary. However, the Boston "recovery" is still far from complete as is the case in many communities throughout the state.

Knowing this, the SCORP Technical Advisory Committee wanted to ascertain the impact of Proposition 2-1/2 on the provision, access and programming of outdoor recreation and conservation resources. Municipal officials were asked the following questions: Had Proposition 2-1/2 eliminated programs, activities, areas or facilities? Had it prevented the acquisition and development of recreation and conservation areas, programs or activities? Had it caused the shift of responsibility for providing outdoor recreation to private agencies? Had it led to increased use of fees and charges? Were there other difficulties, as well, or had problems at the local level been largely exaggerated?

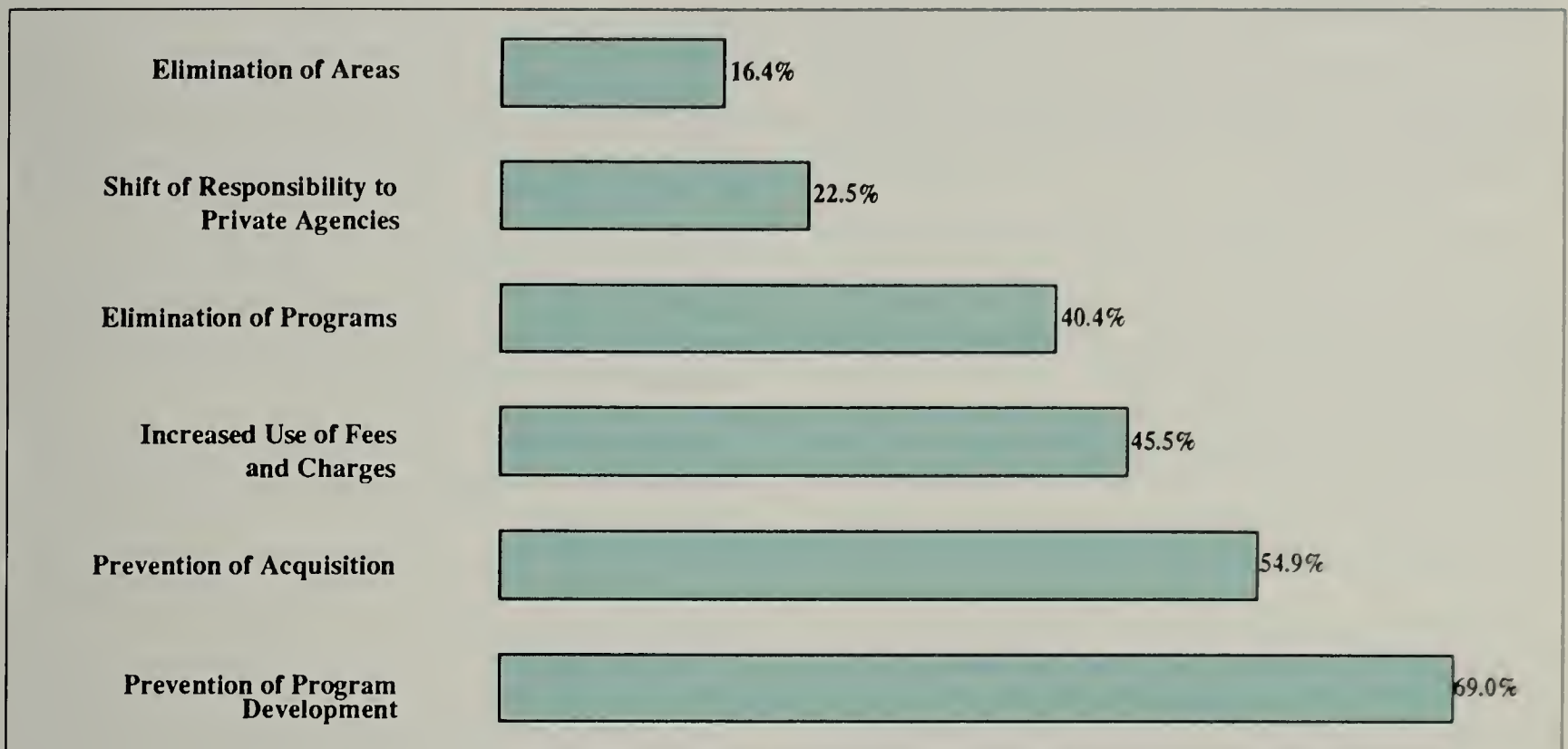
Where We are Today. The results were interesting - four of the six possible "impacts" of Proposition 2-1/2 were experienced by less than half of the responding communities (Figure 4.4). However, more than two-thirds claimed Proposition 2-1/2 had prevented them from developing new recreation programs, while over half were prevented from acquiring new areas and facilities. Not surprisingly, there were frequent reports of increased fees and charges and eliminated programs. Perhaps most important was that only one in five stated that none of the six problems had occurred following this tax-limiting legislation.

Significant differences related to urban influence were found for three of the six issues included in the survey. First, the elimination of programs due to the effects of Proposition 2-1/2 increased as population levels increased.



Photo by Jack Maley

Figure 4.4
Perceived Effects of Proposition 2-1/2



Three-fourths of the urban communities noted the demise of programs, compared to one-fourth of the rural respondents, and one-half of their suburban counterparts.

Second, a similar trend was apparent in the elimination of recreation areas. While only 16 percent of all responding communities experienced the actual loss of recreation areas, those losses were heaviest in urban settings which, therefore, affected large numbers of people.

Third, many planners have expressed concern over the use of fees and charges since economically disadvantaged populations may be excluded from various programs. These concerns were reflected in the survey when urban influence was found to be positively correlated with the increased use of fees and charges. More than 60 percent of their suburban neighbors noted similar trends. While the use of fees and charges was primarily confined to more suburban and urban areas in the eastern portion of the state, this issue should be further examined in all communities to identify the extent to which fees and charges adversely affect participation.

Other Priorities

Access for People with Disabilities. Almost 70 percent reported that there were sites that were not accessible to people with disabilities. Despite federal and state laws mandating access, nearly half the respondents stated that the reason for the lack of access was that citizens had not requested a change. Other reasons included a lack of local funds, lack of state and federal funds, and a lack of government directives encouraging accessibility.

Sensitivity to the issue seems to be high in many communities, with nearly 60 percent of the sampled cities and towns reporting that they had completed handicapped accessibility inventories.

Outdoor Recreation Day Care. Of growing concern today is the care of our children. Traditionally, day care provision has been a responsibility of women in our society, but with 60 percent of today's women working outside the home this tradition has passed. With the growing number of two-income households and the single-family household, today's children, our future leaders, are dependent on our ability to provide quality day care programs. This responsibility is becoming more evident, with many agencies joining in the dialogue in search of relief.

In the municipal survey, respondents were asked about services related to youngsters in need of day care. As reported earlier, more than 50 percent indicated that outdoor recreation day-care programs were either important or very important in their respective communities. Statewide, however, only 28 percent reported that their communities provided such services.

The Liability Issue. Liability protection in recreation, park and conservation areas continues to present difficulties for municipal administrators throughout the country. A 1986 survey by the National Park Service regarding liability and urban communities in thirteen states in the Northeast, highlights the rise of insurance rates, the threat and reality of program elimination, facility closures and some strategies for survival. Nationally, the U.S. Attorney General's Office

reported in February, 1986 that municipalities are one of the groups hit hardest by the liability crisis. A Tort Policy Working Group established by that office stated, "Those cities able to secure bids are finding insurance companies' offers prohibitively expensive. Renewal rates have climbed by as much as 400 percent and often for lower coverages with higher deductibles."

Indicative of the frustrations felt at the local level, more than 65 percent and 62 percent, respectively, believed the state should limit settlement amounts of lawsuits and/or provide insurance at the local level. It is apparent that municipal officials are looking for state guidance in this area of growing concern. Almost one-fourth of the respondents stated that liability problems had caused the actual elimination of access to recreation areas and opportunities. The response was most significant in communities located in the Worcester planning region (nearly 40%).

Communities in Massachusetts and throughout the Northeast are using a variety of strategies to minimize the impact of the liability concern. Of the 20 strategies presented by the National Park Service, most communities report that they are turning to: (1) self or partial insurance programs, (2) the development of risk management programs, (3) working more closely with their broker or agent, (4) lobbying for tort reform, (4) establishing citizen insurance committees, (5) rewriting insurance specifications, (6) closing high risk facilities and/or programs (7) seeking technical assistance from the Public Risk and Insurance Management Association (PRIMA). (8) joining an insurance pool, (9) improving safety programs and training and (10) requiring proof of insurance coverage by lessees and concessionaires.

Need for Financial Assistance. Through the use of open-ended questions, respondents were given the opportunity to suggest ways in which the state could be most helpful to them in regard to the four main areas addressed in the survey: land acquisition, land protection, recreation development, and maintenance of existing areas. Without exception, the largest number of respondents stated that the state could offer the greatest assistance was by providing state funds; the need for additional funds from the state recurred as the dominant theme, clearly in a class by itself.

Fifty-five percent felt that the state has been doing an adequate job in providing information and assistance to local communities. Approximately 16 percent stated that no changes in state policies were needed; however, the need for improved dissemination of information was indicated by nearly 40 percent and more than one in five reported the need for increased technical assistance.

Summary and Discussion

Especially striking was the finding that although urban communities most frequently reported success in addressing the acquisition and maintenance of recreational areas, suburban communities were most likely to report a failure to effectively acquire recreation lands and were second only to the most rural communities (which tend to operate fewer developed recreation facilities) in reporting a failure to effectively maintain facilities. Although all communities agreed on the importance of acquiring conservation areas, according to survey responses, rural communities were the least effective in addressing this issue.

Historically, many federal aid programs have tended to concentrate aid on high densities areas in an attempt to compensate for higher expenditures and decreasing tax bases. State aid programs in Massachusetts generally follow this pattern. Programs such as the Massachusetts Urban Self-Help Program, and even the Land and Water Conservation Fund, commonly favor urban areas with a point system giving more eligibility points to communities with high population densities, low equalized value per capita, and average family income below the state median. In addition, urban communities are eligible for a greater percent of program funds than are other communities.

State-funded programs emphasizing land acquisition and the development of recreation facilities near urban areas are important and should be continued. But as the residents continue to move away from urban centers, consideration should also be given to increasing funding opportunities for suburban and rural communities as well.

Results from the municipal survey indicate that access for people with disabilities was a major concern for all types of communities, with well over half the respondents rating the issue as either important or extremely important. Compared to subjects in the more rural communities, urban and suburban respondents expressed greater concern for the need to develop facilities and provide programs which serve special populations such as the elderly or people with disabilities. The development of access for people with disabilities was also found to be of greater importance within the more urbanized, eastern communities of the state. While most urban respondents indicated that they felt the issue of handicapped access was being addressed, this was not the case in the more rural communities of the state.

Respondents in rural communities were the most concerned about the management of off-road vehicles. These same communities also most frequently reported ineffectiveness in dealing with this problem. It may be appropriate for state planners to provide technical assistance in this area and to identify solutions to problems which exist under the current policy structure.

Another issue of high importance was related to the protection of historically and culturally significant areas. The state should continue to emphasize this issue in its aid programs, as the protection of the Commonwealth's cultural heritage is of obvious concern to local administrators. Technical assistance educational programs, and funding to local communities should be provided to insure that local governments are able to address this important issue.

Those in communities with higher growth rates were slightly more concerned with the protection of scenic areas and development and expansion of recreational facilities than were others. It is within high growth rate communities that scenic areas are most threatened by development. State funding programs should be modified to give eligibility points for high growth rate, similar to the system which has traditionally emphasized aid to high-density areas.

Since the passage of Proposition 2-1/2, considerable concern has been expressed over the increased use of fees and charges, particularly when they prevent economically disadvantaged citizens from participation. The combination of decreasing federal aid, inflating land prices, changing population patterns and weakened ability of local governments to raise property tax revenues could become a major obstacle for communities wishing to reduce the use of fees and charges. This study indicate that increases in the use of fees and charges are particularly common within

suburban and urban areas in the eastern portion of the state. Since disadvantaged populations tend to concentrate in urban areas, the effect of fees upon these individuals ability to take part in recreation should be carefully examined.

Responses related to facility maintenance suggest that this is an important issue in all but the most rural communities. In all likelihood, more urbanized communities need assistance with rehabilitation and maintenance of older, more heavily used recreational facilities.

State Agency Involvement in Water Protection

The importance of protecting water supplies within Massachusetts was strongly affirmed by respondents in this study. Communities of all types agreed on this issue. If communities are to address other issues related to recreation, parks and conservation, they must first become confident that the quality of this most basic resource is assured for the future. Accordingly, state efforts should continue in the area of water resource protection, with an emphasis on technical and financial assistance to more rural and rapidly growing municipalities. In addition to the concern for water quality, development of water-based recreation was identified as an important issue within all types of communities, with rural/suburban and suburban communities indicating the greatest concern. Respondents indicated that they have not been effective in meeting the need for water-based recreation. Accordingly, DEM and the MDC should continue to place a high priority on water-based recreation facilities. Mid-sized communities should be especially targeted for such development. The issue should be further examined to determine whether communities are primarily in need of assistance to acquire waterfront land, develop facilities and programs, or both. Given the importance of water quality issues at the local level, the following is presented to clarify the variety of state water-related programs.

The Massachusetts Water Resources Authority (MWRA) is only one of the many state and local organizations whose job it is to assure a healthy water supply. The MWRA specifically distributes and treats water from the Quabbin and Wachusett Reservoirs and the Ware River for two million people in 46 towns and cities, including Boston and Worcester. A vast network of aqueducts, tunnels and pipelines funnels water from central Massachusetts sources to outlying communities. From there, local water departments bring it to individual homes.

Created by the legislature in 1985, the MWRA is an independent authority, funded through water and sewer revenue. This agency is responsible for the sewer and water works systems formerly operated by the Metropolitan District Commission. The MWRA is actively involved in water conservation education for those who use its system.



Photo by Susan Wilson



Photo by Pamela Bailey

Metropolitan District Commission (MDC) Division of Watershed Management oversees the protection of the Quabbin and Wachusett Reservoirs and their watersheds as well as the Ware River Watershed. It is responsible for the delivery of pure water into the MWRA aqueduct system. The division also has programs of watershed surveillance and protection, forest management, and visitor education.

The **Department of Environmental Quality Engineering (DEQE)** is the major state agency responsible for overseeing and regulating drinking water quality, and for managing general water quality.

Under DEQE is the **Division of Environmental Analysis**, the support facility for investigatory, compliance, regulatory and monitoring programs. This division tests waters to locate possible pollutants or other toxic materials, and chemically analyzes drinking water. The **Division of Water Supply** oversees all public drinking water supplies. This division monitors the bacterial and chemical content of all the water supply sources in the state. Local boards of health advise owners of private wells on issues of installation and illness. However, the actual testing of private wells is the homeowner's responsibility.

DEQE also includes a **Water Pollution Control Division**, a regulatory agency which creates programs to prevent, control and abate water pollution. Its duties include examining, setting standards for, and classifying Commonwealth waters, as well as issuing permits, enforcing pollution laws and investigating pollution complaints. This division also administers the Clean Lakes Program, which offers grants to local communities working to free their lakes and ponds from excessive aquatic growth.

The **Department of Environmental Management's Division of Waterways** designs and constructs waterway improvements and flood control facilities. The **Division of Planning and Development** is responsible for the Dam Safety Program which inspects state, local and privately-owned dams across the state. The **Division of Water**

Resources collects basic water resources data; develops long-range water resource plans; administers state flood control programs, well-drilling registration and well logs; serves in an advisory capacity to the Water Resources Commission, providing staff support for technical work on interbasin transfer of water and wastewater; and operates the ocean sanctuaries program.

The **Water Resources Commission (WRC)**, chaired by the Secretary of Environmental Affairs, oversees all of these agencies in the development and implementation of state water policies and plans. The WRC has published several documents useful to municipal officials, including "Components of a Minimum Water Conservation Plan" and "Private Water Supply Policies."

Wetlands: Not Just Another Soggy Space

Wetlands recreation use is a fairly new and specialized topic and the relatively low level of importance assigned this issue by respondents reflects this fact. Recreational use of wetlands aside, the need to acquire and protect wetlands for general purposes was identified as a pressing issue second only to water supply. The environmental significance of wetlands is known to most municipal officials and was clearly understood by survey respondents.

A slight majority of communities in both the rural/suburban and urban categories indicated an interest in the recreational use of wetlands although most reported that they have not been effective in this regard. State planners should investigate providing opportunities for wetland access, particularly near urban centers. Such access could prove valuable in meeting demand for selected recreation activities and also in increasing levels of environmental awareness and public recognition of the value of wetlands.

Recreation opportunities aside, wetlands can, and do, improve water quality. They remove nutrients, helping to prevent the over-enrichment of natural waters. They process organic and chemical wastes and reduce sediment loads and reduce siltation in ports, harbors, rivers and reservoirs. Wetlands serve both as groundwater recharge areas and as potential water supplies. In fact, recent estimates suggest that 40 percent to 50 percent of Bay State wetlands may be potential future sources of drinking water. At least 60 municipalities currently have public wells in or near their wetlands.

The wetlands component of the 1988 SCORP is published under separate cover, providing a detailed listing of state activities and actions. Major federal, state and local legislation and programs are outlined here, providing a useful tool for wetlands protection and enhancement. The document is on file at the Statehouse Library in Boston, Publication number #15, 300-40-59-3-88-CR.

Chapter Five

Over a Million Acres

*In search of my mother's garden,
I found my own.*

Alice Walker



Identifying Our Resources

The Commonwealth of Massachusetts is not a large state; in fact it is the sixth smallest in area in the nation. It is also the thirteenth largest in population. Given this relatively high density and its reputation for attracting high tech industry, it is not surprising that many people in other states perceive Massachusetts as an urban state. However, these statistics are deceptive. For example, of the 351 cities and towns in Massachusetts, only 39 have adopted a city form of government; the remainder continue to adhere to some form of town meeting government. While this would be unwieldy in many communities, it is the norm in a state in which 55 percent of all communities have populations of less than 10,000 people.

The urban image is influenced greatly by the City of Boston and its surrounding metropolitan area. But beyond a radius of approximately 25 miles, the character of the state changes to a classic New England, rural setting. There are several exceptions, of course, such as the cities of Worcester and Springfield, with their populations of approximately 180,000 each, but much of Massachusetts consists of farmlands, woodlands and open space. As will be apparent in the supply analysis, the outdoor recreation and conservation resources throughout the state are diverse, ranging from beaches and harbors in the city of Boston to the peak of Mt. Greylock in the heart of the Berkshire Mountains.

Gathering accurate statewide data is always a challenge, whether states are large or small. As mentioned earlier, information was obtained from those who knew best: those closest to the facilities themselves, municipal officials who were knowledgeable about the outdoor recreation and conservation resources within their respective cities and towns as well as regional managers at both the state and federal levels, and administrators within key private, nonprofit organizations.

The response was slow, but gratifying. No key organization or agency was missed and updates were obtained directly from 286 cities and towns. Numerous sources were used to update the resource inventories of the remaining 65 communities. These included directories of ski areas, golf courses, resorts, tourist attractions, commercially published books, and the personal knowledge of research team members.

Information was collected for nearly 11,000 different sites. From mountains to sea, the findings of the supply inventory presented in this chapter are impressive and their meaning will be particularly important when related to demand data in Chapter Seven.

The Massachusetts Tally

There are numerous changes in inventory data since the last extensive inventory was completed in 1978 when data were obtained for approximately 7,800 sites. Since then, over 4,000 sites were added and more than 6,000 sites were updated. Those sites which were deleted are either no longer in existence (e.g., campgrounds which closed) or were originally entered erroneously (e.g., sites that were inadvertently duplicated). The following summarizes the changes which have occurred over the past ten years:

Number of sites added	4,460
Number of sites updated	6,217
Number of sites unchanged	881
Number of sites deleted	595
Total number of sites processed	12,084
Total active sites	10,963

Decision makers within both public and private agencies vary in their preferences for the types of data sets that are most helpful to them. Thus, the results of the inventory are presented for the state as a whole followed by planning regions and communities which fall within the state's Coastal Zone Management region. Analyses by county were also conducted and are included in Volume Two.

Statewide Resources

To put regional findings in perspective, results are first presented for the state as a whole, according to the acres and number of sites falling under different owner types of each site (Table 5.1). These primarily include municipal, county, state and federal governments; private, nonprofit organizations; and private-for-profit businesses.

Not unexpectedly, the largest number of acres fell under the jurisdiction of the state. Specifically, nearly 45 percent of the land fell under state ownership followed by 27 percent owned by municipal governments. However, it was municipalities that were responsible for managing the greatest number of sites which totaled 7,192. The contrasts are depicted in Figures 5.1 and 5.2.

Table 5.1
Total Acres and Sites
by Owner Type

Owner Type	Number of Sites	Percent of Sites	Total Acreage	Percent Total Area
County	41	0.4	1,810.0	0.2
Federal	107	1.0	80,162.9	7.3
Municipal	7,192	65.6	298,678.7	27.1
Other	23	0.2	1,124.1	0.1
Private Nonprofit	1,507	13.7	132,051.6	12.0
Private Profit	1,341	12.2	101,221.9	9.2
State	752	6.9	488,974.8	44.3
Statewide Total	10,963	100.0	1,104,024.0	100.0

The role of municipal and state agencies in managing and protecting these resources is apparent. Municipal governments are responsible for nearly 66 percent of all sites in Massachusetts; the state is responsible for almost 7 percent. Because government agencies are responsible for so many resources, there is often a tendency to focus on municipal, state and federal holdings. However, indispensable contributions are also made by those in the private-for-profit and nonprofit sectors. It is particularly noteworthy that the inventory process identified more sites and acres managed by nonprofit organizations than by the private-for-profit sector. This can be put in perspective by considering the magnitude of holdings within the private-for-profit sector such as golf courses, ski resorts and marinas. Responsible for an even greater number of sites and acreage, many nonprofit agencies develop these areas and facilities without putting strains on the taxpayer. Thus, organizations such as the YMCA, YWCA Girl and Boy Scouts, 4-H and The Trustees of Reservations are contributing significantly to the protection of valued resources within the Commonwealth while providing relatively low-cost recreation and conservation services.

Another group which provides important opportunities for outdoor recreation experiences consists of private landowners. Numerous individuals who own undeveloped properties permit the use of their land for such activities as hiking, nature study, hunting, fishing, cross-country skiing, snowmobiling and horseback riding. These properties do not appear in the inventory but contribute significantly to the state's overall recreation and conservation resources.

The majority of the inventory focused on the facilities and activities that were available at each site. Facilities and activities were grouped into clusters as follows: (1) natural resources, (2) sports and recreation, (3) trail-based resources, (4) water-based resources and (5) support facilities. Findings for the state as a whole, by owner type, are presented for facilities in Table 5.2 and the availability of activities in Table 5.3. It is important to note that the results presented in Table 5.3 identify sites at which activities are provided, regardless of how extensive facilities were. For example, picnicking may have been available at a

Figure 5.1
Acres Owned by Agency Type

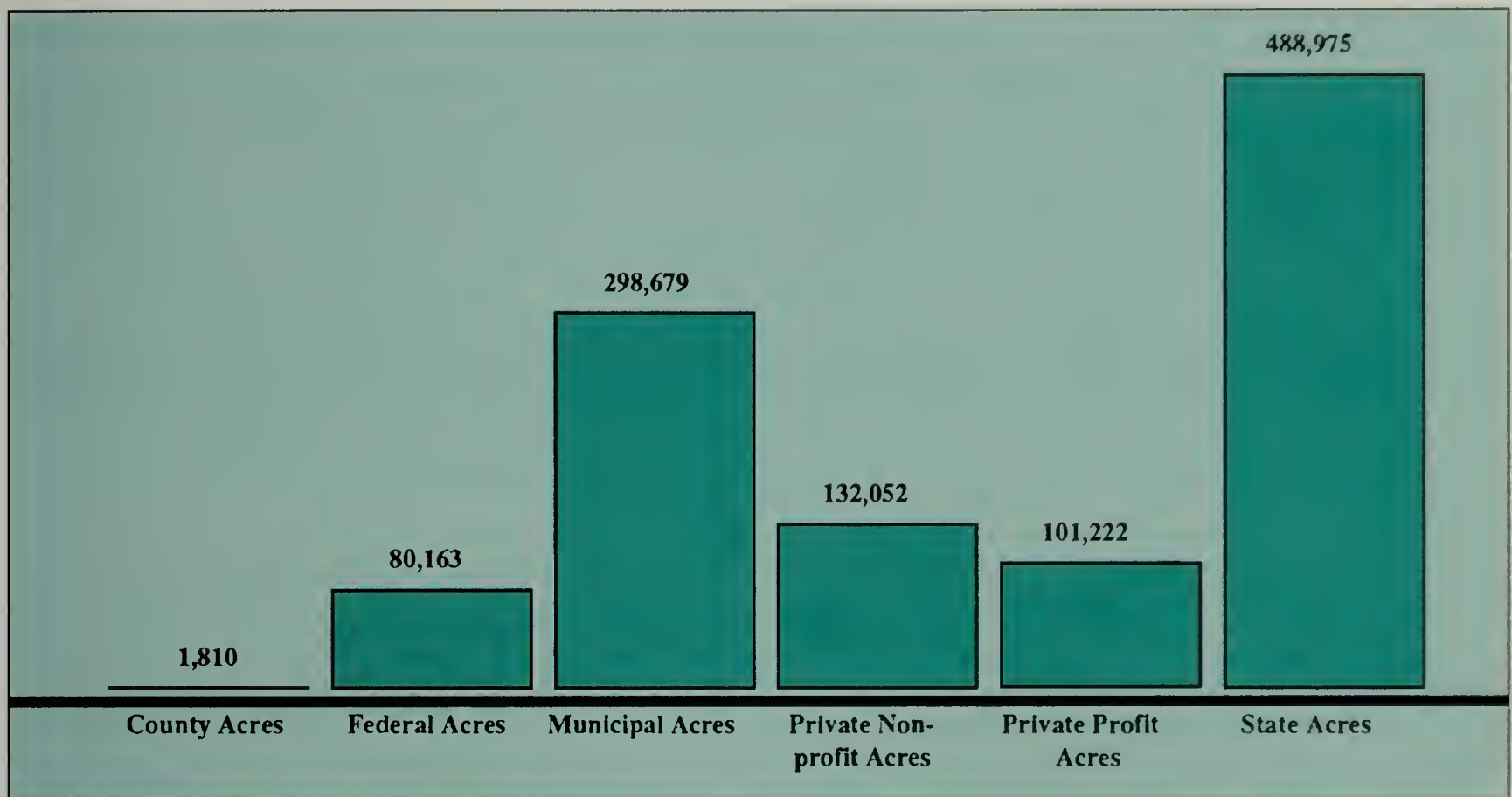
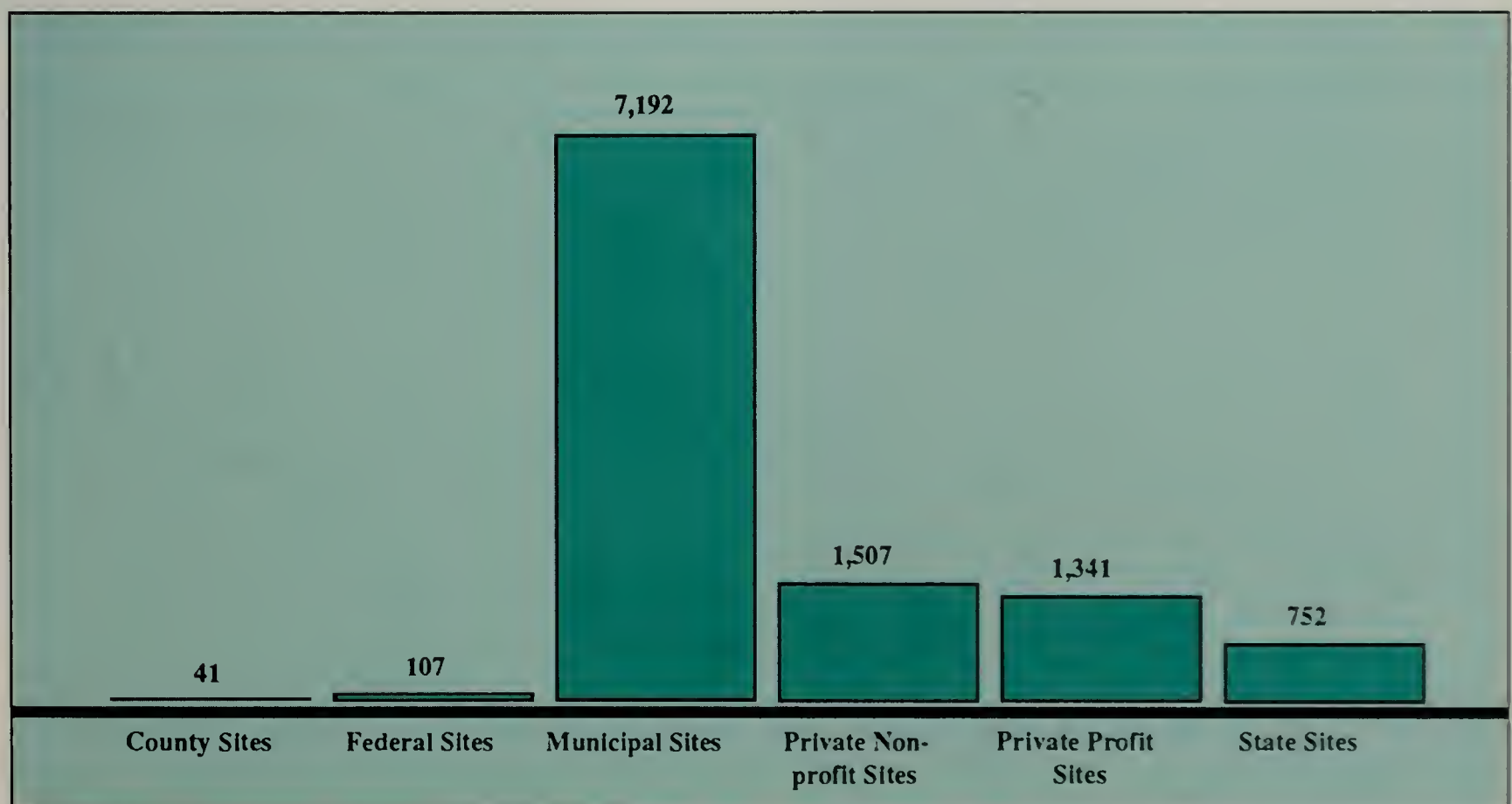


Figure 5.2
Sites Owned by Agency Type



site which provided no picnic tables, one table, or 100. Softball might well take place at sites that have no formally developed softball fields. The purpose of the inventory of *activities* was not to provide information on *facilities*; rather, it was to identify the number of sites that provided these recreational activity opportunities.

Several patterns are evident from these findings. For example, despite differences in the number of sites managed by municipalities and the state, both provide approximately equal opportunities for picnicking if one uses the number of picnic tables as an indicator. Surprisingly, perhaps, the private-for-profit sector reported having over one-third more tables than either municipalities or the state. In addition, the number of campsites provided for tents and trailers was also greatest within the private-for-profit sector. The differences, particularly for trailer sites, is substantial. Predictably, private-for-profit businesses also led the way for cabins, ski-lift capacity, golf courses and boat slips and moorings.

On the other hand, with the exception of golf, municipalities had the greatest number of sport- and game-related recreation facilities as well as the greatest number of significant historical, cultural and architectural features, and

significant natural features. State holdings were greatest in two categories: miles of trails and acres of fresh water.

The greatest number of activities take place on municipal sites. With few exceptions, differences were considerable. The fact that these sites are local underscores the importance of areas and facilities which are within short travel distances of so many Massachusetts residents.

Many important support facilities were identified throughout the state. It is noteworthy that nonprofit organizations reported the ability to provide developed seating for more than 61,000 people, which is more than 20 percent of the statewide total. Facilities such as the shed at Tanglewood make a significant contribution to that figure.

Two aspects of trails designated for use by recreational vehicles (RVs) such as snowmobiles are presented in Table 5.2; i.e., the number of different trails and the total number of miles of trails. Nearly nine percent of all trails allow the use of RVs which consists of 13.8 percent of the total trail miles. The use of RVs on state lands is a controversial issue and the implications of the trail inventory findings will be discussed further in the context of the demand for trails.

Agencies Managing Sites. The number of different agencies involved in recreation, parks and conservation planning is extensive. The levels of involvement of both public and private organizations within the state is extensive. It is especially gratifying to see the *extent* of such involvement by so many organizations and governmental departments (Table 5.4).

A summary of the number of acres and number of sites, by region, is presented in Table 5.5. In terms of statewide percentages, the greatest number of sites were located in the Northeastern region while the largest acreage was found in the Connecticut Valley.

There was considerable variation in the availability of the different types of facilities from region to region (Table 5.6). Several of the differences are noteworthy. The Berkshire region is known for its camping opportunities, yet it is second only to the Central region for providing the least number of tent sites and second only to the MDC region for the least number of trailer sites. Along similar lines, the number of picnic tables is also low compared to all regions except the MDC.

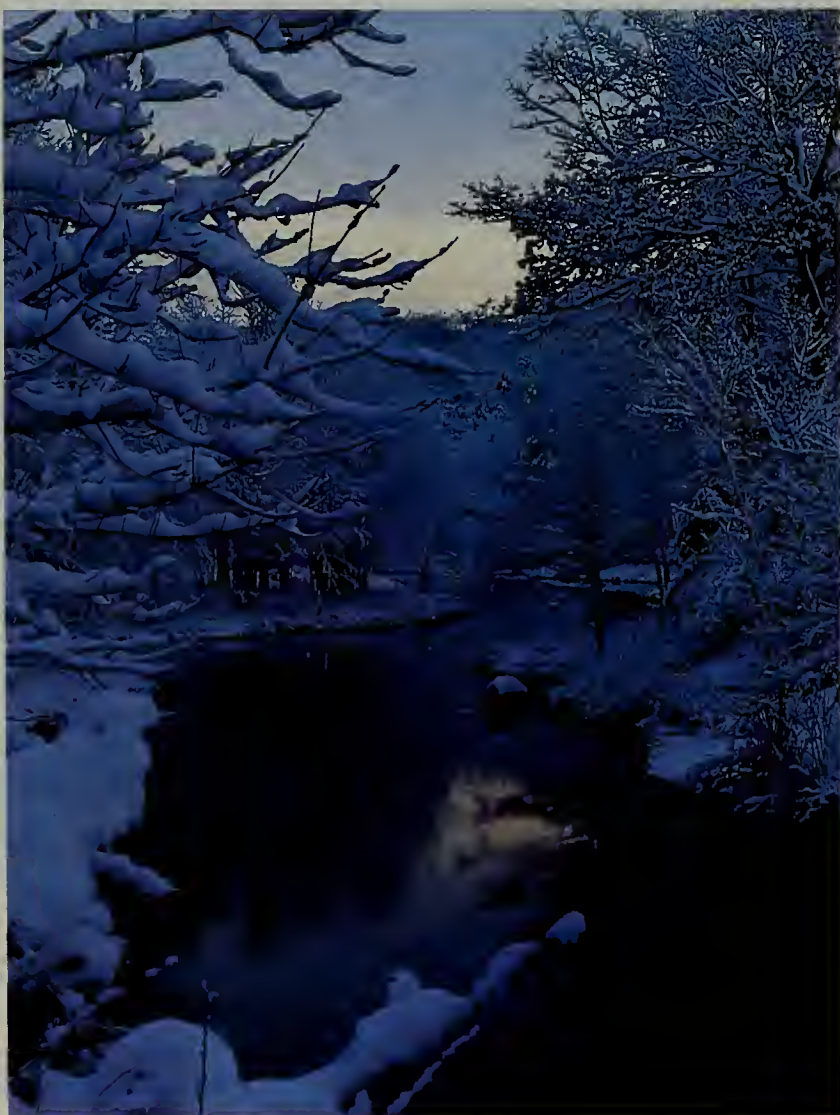


Photo by Paul Rezendes

Table 5.2
Statewide Inventory of Facilities by Owner Type

	Municipal	County	State	Federal	Private Profit	Private Non-profit	State-wide*
Number of Sites:	7,192	41	752	107	1,341	1,507	10,940
Total Acreage:	298,679	1,810	488,975	80,163	101,222	132,052	1,102,900
Acreage Improved Recreation:	11,290	2	12,829	1,082	5,606	7,252	38,061
Possible Expansion Sites:	1,322	4	139	16	118	205	1,804
<i>Natural Resource Facilities</i>							
Cabins	80	0	21	10	232	296	639
Significant Hist/Cult/Arch	323	2	68	19	8	114	534
Significant Natural Feature	306	0	80	8	26	127	547
Nature Center	31	1	14	1	3	48	98
Tent Sites	455	10	1,193	396	2,706	2,374	7,134
Trailer Sites	787	0	2,683	927	13,305	394	18,096
Picnic Tables	7,874	28	7,907	1,062	12,393	5,122	34,386
Shelters	149	0	61	1	56	189	456
<i>Recreation Facilities</i>							
Archery/Target Shooting	44	0	2	3	23	87	159
Basketball Courts	1,426	0	40	6	37	73	1,582
Baseball/Softball Fields	2,197	2	68	12	40	144	2,463
Football/Soccer Fields	1,057	2	30	5	16	79	1,189
Open Recreation Fields	1,284	0	152	17	72	238	1,763
Golf Holes	565	18	54	18	3,786	269	4,710
Playgrounds/Tot Lots	1,566	0	71	3	44	54	1,738
Tennis Courts	2,862	10	238	17	1,116	632	4,875
Skating Rinks (per 1000 sq. ft.)	2,999.5	0.0	686.8	10.6	340.8	461.6	4,499.3
Swimming Pools (per 1000 sq. ft.)	749.2	0.0	242.5	31.1	680.3	435.7	2,138.8
Ski Lift (people per hr.)	4,355	0	14,801	0	87,010	7,500	113,666
<i>Trail-Based Facilities</i>							
Trails (miles)	887.2	13.0	1,458.4	140.7	281.3	859.5	3,640.1
RV Trails	32	0	40	6	5	8	91
RV Trail (miles)	57.3	0.0	384.8	13.2	47.0	1.1	503.4
Designated Handicapped Trails	65	0	10	4	4	19	102
<i>Water-Based Facilities</i>							
Boat Ramps	284	2	138	9	99	30	562
Boat Slips and Moorings	4,964	0	28	1	17,662	286	22,941
Freshwater Bodies	1,402	19	422	36	266	491	2,636
Freshwater Body Acreage	37,883	214	60,351	1,854	6,550	9,318	116,170
Freshwater Beach (miles)	47.1	0.0	7.5	3.5	7.8	29.6	95.5
Saltwater Beach (miles)	74.0	0.0	28.0	15.8	7.0	17.7	142.5
Tidal Frontage (miles)	227.4	1.2	67.4	32.4	20.6	70.2	419.2
<i>Support Facilities</i>							
Comfort Stations	547	5	278	48	327	279	1,484
Developed Spectator Seating	114,664	3,300	49,101	31	50,740	61,407	279,243
Equipment Concessions	41	0	27	1	138	11	218
Food Concessions	203	1	52	10	330	58	654
Summer Parking Spaces	239,420	2,023	50,456	11,307	132,783	70,696	506,685
Winter Parking Spaces	175,073	513	31,743	7,674	70,586	45,808	331,397
Stages/Band Shells	90	2	17	3	12	16	140
Visitor Centers	26	0	20	9	20	54	129

*Unclassified sites = 23 (1,124 acres)

Table 5.3
Number of Sites Where Recreation
Activities Occur by Owner Type

	Municipal	County	State	Federal	Private Profit	Private Non-profit	State-wide*
Number of Sites:	7,192	41	752	107	1,341	1,507	10,940
Natural Resource Activities							
Camping	176	3	56	10	173	178	596
Hiking	2,918	20	343	67	464	816	4,628
Hunting	538	5	177	25	120	157	1,022
Organized Nat/Hist/Cultural	136	0	34	16	7	106	299
Nature Observation	2,912	22	380	70	456	925	4,765
Picnicking	1,773	6	190	46	342	461	2,818
Sightseeing	499	1	120	30	62	97	809
Walking/Jogging	1,634	5	188	36	93	287	2,243
Recreation and Sports							
Archery/Target Ranges	111	2	28	3	102	200	446
Baseball/Softball	1,369	1	35	7	35	104	1,551
Football/Soccer	862	1	20	4	20	55	962
Golf	71	2	4	2	280	30	389
Other Team Sports	676	0	28	3	33	62	802
Organized Special Events	558	1	71	13	64	135	842
Tennis	934	1	46	4	253	146	1,384
Basketball	1,081	0	22	2	19	52	1,176
General Playground	2,004	0	91	8	74	183	2,360
Transportation Activities							
Bicycling	833	2	129	28	165	160	1,317
Four-wheeling	23	0	1	4	2	2	32
Horseback Riding	658	3	126	14	147	239	1,187
ATV/Motorcycling	119	1	59	5	29	27	240
Ice-skating	649	3	85	6	90	120	953
Skiing (downhill)	37	0	13	0	47	8	105
Skiing (X-Country)	923	3	161	27	181	331	1,626
Snowmobiling	308	3	105	12	102	108	638
Water-Based Activities							
Boating (motor)	573	7	145	19	367	81	1,192
Boating (non-motor)	912	15	202	31	452	245	1,857
Fishing (freshwater)	886	12	256	24	250	312	1,740
Fishing (saltwater)	278	1	27	14	182	23	525
Swimming (pools)	172	0	54	4	200	95	525
Swimming (freshwater)	326	2	63	9	168	156	724
Swimming (saltwater)	252	0	18	15	26	16	327

*Unclassified sites = 23

Table 5.4
Sites Managed by Various
Administrative Agencies

Administrative Agency	Number of Sites	Average Size	Total Acres*
Municipal			
Board of Selectmen	318	33.5	10,666.0
Conservation Commission	1,771	36.3	64,301.9
Department of Public Works	350	160.0	55,994.4
Housing Authority	18	1.4	25.6
Municipal	869	23.4	20,362.0
Parks and Recreation Commission	2,282	19.0	43,428.6
School Department	1,021	19.8	20,203.2
Town Forest Committee	52	136.9	7,118.6
Water Department	292	196.5	57,366.0
Other, Municipal	193	102.8	19,832.3
County	39	46.3	1,807.1
State			
Commonwealth of Massachusetts	12	51.9	622.5
Dept. of Corrections	6	593.6	3,561.3
Dept. of Environmental Management	287	965.7	277,155.1
Dept. of Fisheries and Wildlife	196	314.1	61,560.7
Dept. of Mental Health	15	401.8	6,027.5
Dept. of Public Health	1	11.3	11.3
Dept. of Public Works	11	97.8	1,075.9
Metropolitan District Commission	190	709.4	134,790.3
Other, Massachusetts Departments	45	109.8	4,942.2
Federal			
National Park Service	53	596.1	30,163.4
U.S. Army Corps of Engineers	17	862.6	14,663.4
U.S. Department of Defense	19	1,002.4	19,044.8
U.S. Fish and Wildlife	10	1,383.0	13,830.0
Other, Federal	6	47.1	282.3
Private, Nonprofit			
Boy or Girl Scouts	88	140.8	12,388.7
Boys or Girls Clubs	20	47.8	955.9
Fish and Game Clubs	192	74.5	14,305.3
Historical Society	27	17.1	461.7
Land Trusts	325	43.7	14,208.1
Massachusetts Audubon Society	96	175.7	16,862.9
Nature Conservancy	33	109.2	3,602.4
Other Private, Non-Profit	545	81.7	44,506.1
Religious Organizations	87	73.8	6,419.2
Trustees of Reservations	94	210.6	19,797.0
YMCA or YWCA	63	77.0	4,851.5
Other, General	13	235.4	3,060.7
Other, Private Nonprofit	25	23.2	739.4
Private, Profit			
Camps	64	95.3	6,099.4
Fitness Clubs	15	31.6	474.4
Golf Courses, Private	242	119.0	28,788.4
Marinas, Private	242	1.9	456.7
Private Campgrounds	108	71.1	7,673.6
Ski Areas or Slopes	53	167.7	8,885.5
Tennis/Raquet Clubs	58	12.6	733.1
Theme Amusement Parks	12	177.5	2,129.9
Other Private, Profit	488	77.4	37,787.7
Statewide Total	10,963	100.7	1,104,024.0

*Slight variation due to rounding

Table 5.5
Acres and Sites by Planning Region

Planning Region	Number of Sites	% of Sites	Total Acreage	% of Total Acres
The Berkshires	488	4	176,252.5	16
Connecticut Valley	1,284	12	268,828.9	24
Central	1,277	12	177,979.4	16
Northeastern	2,526	23	142,044.0	13
MDC	1,956	18	62,243.5	6
Southeastern	2,036	19	127,999.8	12
Cape & Islands	1,396	13	148,675.9	13
Statewide Total	10,963	100	1,104,024.0	100

As mentioned earlier, trail management of recreation vehicles (RVs) was not effectively addressed by the majority of communities responding to the municipal survey; historically, this has also been a problem at state sites. It is apparent from Table 5.6 that distribution of trails throughout the state is uneven, particularly trails which permit the use of RVs. Predictably, the availability of trails for RV use tends to decrease in regions from west to east. At the same time, population levels are increasing. This may eventually lead to increased trail-related problems.

There are important differences among the types of trails that are characteristic of each region. Only four trails in the state are considered long-distance hiking trails: the Taconic Trail system and Appalachian Trail in the Berkshires, the Metacomet-Monadnock Trail in the Connecticut River region and the Midstate Trail in the Central region. (Although less than 40 miles in length, the Warner trail in the Southeastern region is also considered a long-distance trail by some planners.) Short and long-distance trails alike are important for those wishing to take day-hikes. Shorter trails, however, do not meet the needs of those who seek longer hiking experiences which frequently include camping along the way. Because all long-distance hiking trails in the state extend in a north-south direction, which limits their distance, consideration should be given to the findings of DEM's 1986 long-distance trails study which recommended the development of an east-west, long-distance trail that would extend from "the mountains to the sea."

Acres reported for freshwater bodies are in addition to those reported for recreation and conservation sites. The relatively large acreage reported for a small state may look impressive. However, one facility alone, Quabbin Reservoir, accounts for nearly 10 percent of those acres. Furthermore, only two water-based recreation activities are permitted at Quabbin, boat and shore fishing. There are, in fact, very few freshwater bodies in Massachusetts that provide opportunities for such activities as sailing, water-skiing, power boating and windsurfing.

Because of their proximity to the most urban area of the state, it is not surprising that the greatest opportunities for golf are in the Northeastern and Southeastern regions. What may be surprising, however, is that despite the large number of acres of open space that exist in the Berkshires, that region was found to provide the fewest opportunities for golf. The point is that commonly held *images* of regions may not be supported by the actual situation. It is unlikely, for example, that many individuals would have known that the Cape and Islands and the Central Massachusetts regions were found to provide the greatest opportunities for tent and trailer camping, at least in terms of the numbers of individual sites within their camping facilities.

The distribution of recreational opportunities at sites, by planning regions, is summarized in Table 5.7. Again, it must be emphasized that these findings are not necessarily a reflection of the availability of facilities related to activities nor do they indicate the extent of availability for any given site. They simply report the presence of activities at sites, even at minimal levels.

Although a greater number of campsites were reported for the Cape and Islands region than for the Berkshire region, a greater number of separate camping *areas* were reported in the Berkshires, regardless of their size, which may contribute to the "campground image" of the region. In terms of capacity, however, it is relatively low among the regions. The number of sites in the Berkshires that provide boating, freshwater fishing, freshwater swimming and swimming in pools is also low. The obvious exception is the presence of many trails which provide numerous opportunities for hikers and mechanized trail users, alike.



Photo by Susan Wilson

Table 5.6
Inventory of Facilities by Planning Region

	Berk-shires	Conn Valley	Central Mass	NE Mass	MDC	SE Mass	Cape & Islands	State-wide
Number of Sites:	488	1,284	1,277	2,526	1,956	2,036	1,396	10,963
Total Acreage:	176,253	268,829	177,979	142,044	62,244	128,000	148,676	1,104,024
Acreage Improved Recreation:	2,055	12,952	5,104	5,864	3,784	4,555	3,808	38,121
Possible Expansion Sites:	90	256	275	411	197	344	234	1,807
Natural Resource Facilities								
Cabins	182	83	80	36	17	140	101	639
Significant Hist/Cult/Arch	40	84	32	60	148	79	91	534
Significant Natural Feature	33	60	38	94	149	43	136	553
Nature Center	4	11	19	18	12	20	14	98
Tent Sites	887	967	824	1,345	187	1,522	1,402	7,134
Trailer Sites	1,922	2,091	5,018	1,421	460	3,081	4,103	18,096
Picnic Tables	2,730	6,548	8,674	3,954	2,208	4,736	5,538	34,388
Shelters	43	151	58	36	84	59	25	456
Recreation Facilities								
Archery/Target Shooting	13	16	41	25	3	36	26	160
Basketball Courts	62	230	186	283	483	264	75	1,583
Baseball/Softball Fields	98	410	310	576	538	422	109	2,463
Football/Soccer Fields	47	222	170	286	215	198	51	1,189
Open Recreation Fields	93	426	201	340	390	223	95	1,768
Golf Holes	258	709	563	917	644	1,096	523	4,710
Playgrounds/Tot Lots	99	235	186	336	554	241	87	1,738
Tennis Courts	319	645	476	1,014	1,130	917	374	4,875
Skating Rinks (per 1000 sq. ft.)	310.7	739.4	532.9	1,242.9	1,144.5	453.3	75.6	4,499.3
Swimming Pools (per 1000 sq. ft.)	268.4	403.4	299.1	363.1	475.6	278.2	51.1	2,138.9
Ski Lift (people per hr.)	37,931	24,270	12,075	32,490	4,300	2,600	0	113,666
Trail-Based Facilities								
Trails (miles)	767.6	587.4	577.1	841.8	213.2	399.9	265.3	3,652.3
RV Trails	9	21	15	17	1	14	14	91
RV Trail (miles)	150.0	106.8	58.6	96.2	10.0	46.5	35.3	503.4
Designated Handicapped Trails	2	11	17	19	13	14	26	102
Water-Based Facilities								
Boat Ramps	47	42	55	98	42	109	170	563
Boat Slips and Moorings	141	479	24	4,940	4,305	5,243	7,809	22,941
Freshwater Bodies	200	355	321	659	214	503	390	2,642
Freshwater Body Acreage	12,556	30,466	20,025	14,901	3,759	19,358	15,143	116,208
Freshwater Beach (miles)	11.7	13.1	16.0	12.0	8.4	22.3	12.0	95.5
Saltwater Beach (miles)	0.0	0.0	0.0	15.5	30.0	26.7	70.3	142.5
Tidal Frontage (miles)	0.0	0.0	1.6	76.7	52.2	87.4	205.9	423.8
Support Facilities								
Comfort Stations	88	343	179	190	141	287	256	1,484
Developed Spectator Seating	9,522	55,842	74,262	47,438	67,136	22,313	2,730	279,243
Equipment Concessions	10	29	15	39	17	68	40	218
Food Concessions	37	188	76	91	69	105	88	654
Summer Parking Spaces	32,086	86,283	93,916	100,379	48,955	90,160	55,055	506,834
Winter Parking Spaces	16,220	43,423	62,961	67,283	37,669	65,976	37,895	331,427
Stages/Band Shells	8	25	23	17	20	21	26	140
Visitor Centers	24	18	13	14	16	25	19	129

Table 5.7
Availability of Activities
by Planning Region

Number of Sites:	Berk-shires 488	Conn Valley 1,283	Central Mass 1,277	NE Mass 2,526	MDC 1,956	SE Mass 2,107	Cape & Islands 1,326	State-wide 10,963
<i>Natural Resource Activities</i>								
Camping	81	109	96	132	22	108	48	596
Hiking	312	593	688	1,059	504	954	523	4,633
Hunting	81	177	180	164	8	211	202	1,023
Organized Nat/Hist/Cultural	24	37	34	53	49	53	49	299
Nature Observation	276	364	484	1,302	600	981	767	4,774
Picnicking	173	528	431	598	382	407	304	2,823
Sightseeing	52	80	75	113	210	111	171	812
Walking/Jogging	120	406	283	474	307	289	370	2,249
<i>Recreation and Sports</i>								
Archery/Target Ranges	51	90	79	76	26	92	33	447
Baseball/Softball	70	230	223	379	301	263	86	1,552
Football/Soccer	40	152	158	231	178	149	55	963
Golf	25	66	58	65	42	82	51	389
Other Team Sports	23	104	122	189	174	115	75	802
Organized Special Events	50	137	132	157	133	136	97	842
Tennis	84	147	188	300	318	255	92	1,384
Outdoor Basketball	56	170	144	207	360	190	50	1,177
General Playground	119	458	275	437	685	298	92	2,364
<i>Transportation Activities</i>								
Bicycling	103	320	304	158	128	206	98	1,317
Four-wheeling	1	4	8	3	0	3	13	32
Horseback Riding	80	177	156	433	53	228	63	1,190
ATV/Motorcycling	25	67	53	25	7	51	12	240
Ice-skating	67	150	143	245	159	154	35	953
Skiing (downhill)	21	19	15	26	11	12	1	105
Skiing (X-Country)	192	252	237	645	97	170	37	1,630
Snowmobiling	71	172	174	122	8	88	3	638
<i>Water-Based Activities</i>								
Boating (motor)	44	79	82	202	123	283	380	1,193
Boating (non-motor)	87	142	206	377	175	416	457	1,860
Fishing (freshwater)	145	322	344	426	102	292	113	1,744
Fishing (saltwater)	0	0	0	73	61	99	292	525
Swimming (pools)	37	125	65	105	85	90	18	525
Swimming (freshwater)	96	115	168	117	32	130	68	726
Swimming (saltwater)	0	0	0	24	44	50	209	327

Within the context of supply and demand it is useful to present data on the number of recreation and conservation acres on a per capita basis. Results are summarized by region in Table 5.8. The lowest ratio was found in the MDC region, followed by the Northeastern and Southeastern regions, which also tend to be more urban than the central and western areas of the state. The most favorable ratio was found in the least populated Berkshire region, which would be expected due to its lower population density.

Sites were classified according to their general use levels by (1) general outdoor recreation area, (2) natural environment or (3) historic and cultural area. Many sites

could be categorized under more than one category; however, respondents were asked to use the single choice which best characterized each site. Thus, the guidelines provided to respondents stated that a heavily wooded park with significant cultural or historic features and developed playing fields, parking areas and restroom facilities was to be classified as a *general recreation area* (see Table 5.9).

In most cases, sites were classified as general recreation areas. The regions reporting the largest number of sites in this category were the three eastern regions, exclusive of the Cape and Islands region. The Berkshires registered the lowest number in this category.

Table 5.8
Acres Per Capita of Recreation/Conservation
Lands by Planning Region

Planning Region	1980 Population (US Census)	1986 Population (Estimate)	Regional Land Area (Acres)	SCORP Land Area (Acres)	% SCORP Lands to Reg. Land	SCORP Acres Per 1,000 Pop. (1986)
The Berkshires	145,110	141,300	597,043	176,253	29.5	1,247.4
Connecticut Valley	646,148	652,310	1,185,741	268,829	22.7	412.1
Central	646,352	661,110	962,131	177,979	18.5	269.2
Northeastern	1,199,601	1,235,740	762,829	142,044	18.6	114.9
MDC	1,862,598	1,841,690	239,795	62,244	26.0	33.8
Southeastern	1,075,330	1,112,260	915,981	128,000	14.0	115.1
Cape & Islands	161,954	187,510	353,235	148,676	42.1	792.9
Statewide Total	5,737,093	5,831,920	5,016,755	1,104,024	22.0	189.3

Table 5.9
Site Classifications by Planning Region

Planning Region	General Outdoor Recreation Area N (%)	Natural Environment N (%)	Historical/ Cultural N (%)	Total N (%)
The Berkshires	284 (59.4)	163 (34.1)	31 (6.5)	478 (100.0)
Connecticut Valley	869 (68.9)	341 (27.0)	52 (4.1)	1,262 (100.0)
Central	818 (64.7)	397 (31.4)	49 (3.9)	1,264 (100.0)
Northeastern	1,176 (48.0)	1,179 (48.1)	96 (3.9)	2,451 (100.0)
MDC	1,136 (62.9)	579 (32.1)	90 (5.0)	1,805 (100.0)
Southeastern	1,062 (53.8)	839 (42.5)	72 (3.6)	1,973 (100.0)
Cape & Islands	636 (49.6)	597 (46.5)	50 (3.9)	1,283 (100.0)
Statewide Total*	5,981 (56.9)	4,095 (38.9)	440 (4.2)	10,516 (100.0)
*Unclassified Sites = 447				

Respondents were asked to report on the availability of transportation to sites, to indicate if auto access to sites was provided, and if parking fees were imposed. The findings are reported in Table 5.10.

Predictably, opportunities for public transportation to sites were greatest within the MDC region; they were lowest within the Cape and Islands. Auto access was possible for most sites and few required the payment of a parking fee.

Fees and charges are frequently perceived as barriers to participation. However, as is apparent in Table 5.11, opportunities are provided at well over half of all sites without the use of fees and charges. A fee is required at many private sites.

MCZM Inventory Findings

As will be apparent in the demand analysis, sites within the Massachusetts coastal zone are heavily used and highly valued. In fact, of the 351 cities and towns within the state, 63 have coastlines on the Atlantic. Accordingly, the findings of the site inventory merit attention within the context of the state's Massachusetts Coastal Zone Management (MCZM) area which consists of all coastal communities in the state. Detailed summaries of inventory findings for MCZM communities are presented for facilities in Table 5.12 and for the availability of activities in Table 5.13. In both cases, comparisons are made only among the communities within the MCZM planning area.

Table 5.10
Parking Fees and Access to Sites by Planning Region

	Berk-shires	Conn Valley	Central Mass	NE Mass	MDC	SE Mass	Cape & Islands	State-wide
Number of Sites:	488	1,284	1,277	2,526	1,956	2,036	1,396	10,963
Access Factor								
Public Transportation to Site								
Yes	113	387	279	441	738	299	106	2,363
No	341	687	962	1,638	530	1,551	1,048	6,757
No Answer	34	210	36	447	688	186	242	1,843
Auto Access to Site								
Yes	395	1,003	1,126	1,750	1,369	1,663	1,140	8,446
No	82	106	114	491	223	304	204	1,524
No Answer	11	175	37	285	364	69	52	993
Parking Fee at Site								
Yes	16	40	35	51	24	39	106	311
No	422	986	1,191	2,054	1,305	1,810	1,070	8,838
No Answer	50	258	51	421	627	187	220	1,814

Table 5.11
Fee-Status of Sites by Region

	Berk-shires	Conn Valley	Central Mass	NE Mass	MDC	SE Mass	Cape & Islands	State-wide
Number of Sites:	488	1,284	1,277	2,526	1,956	2,036	1,396	10,963
Type of Access								
Public, no fee	283	894	884	1,748	1,476	1,375	774	7,434
Public, fee	9	42	41	90	85	70	91	428
Public, non-resident fee	7	5	1	1	1	4	7	26
Public, resident only	44	8	7	15	30	13	47	164
Private, members only for fee	77	107	137	125	71	135	56	708
Private, open to public for fee	51	124	94	158	54	229	150	860
Private, no fee	17	69	76	290	76	133	141	802
Other access types	0	0	1	1	0	1	0	3
No answer	0	35	36	98	163	76	130	538

Table 5.12
Facilities within the MCZM Region

	North Shore	MDC	South Shore	Cape Cod	Total CZM
Number of Sites:	634	1,013	1,225	1,396	4,268
Total Acreage:	34,517	24,087	75,329	148,675	282,608
Acreage Improved Rec:	2,883	1,503	3,459	3,807	11,651
Possible Expansion Sites:	90	39	140	234	503
<i>Natural Resource Facilities</i>					
Cabins	5	10	60	101	176
Significant Hist/Cult/Arch	30	108	41	91	270
Significant Natural Feature	17	136	31	136	320
Nature Center	7	8	14	14	43
Tent Sites	503	39	1,103	1,402	3,047
Trailer Sites	776	15	1,772	4,103	6,666
Picnic Tables	669	704	2,744	5,538	9,655
Shelters	18	50	44	25	137
<i>Recreation Facilities</i>					
Archery/Target Shooting	6	1	15	26	48
Basketball Courts	97	252	125	75	549
Baseball/Softball Fields	135	269	176	109	689
Football/Soccer Fields	47	79	83	51	260
Open Recreation Fields	52	221	121	95	489
Golf Holes	198	146	579	523	1,446
Playgrounds/Tot Lots	106	317	129	87	639
Tennis Courts	202	404	501	374	1,481
Skating Rinks (per 1000 sq.ft.)	264.1	642.2	437.8	75.6	1,419.7
Swimming Pools (per 1000 sq.ft.)	81.4	181.5	72.8	51.1	386.8
Ski Lift (people per hr)	2,800	3,750	0	0	6,550
<i>Trail-Based Facilities</i>					
Trails (miles)	143.6	105.3	261.8	265.3	776
RV Trails	3	0	6	14	23
RV Trail (miles)	12.9	0	35	9	56.9
Designated Handicapped Trails	1	6	11	26	44
<i>Water-Based Facilities</i>					
Boat Ramps	39	26	78	170	313
Boat Slips and Moorings	4,096	3,269	6,929	7,809	22,103
Freshwater Bodies	76	106	239	390	811
Freshwater Body Acreage	367	2,270	10,780	15,143	28,560
Freshwater Beach (miles)	2.9	2.1	16.1	12.0	33.1
Saltwater Beach (miles)	17.2	13.7	41.2	70.3	142.4
Tidal Frontage (miles)	67.3	33.3	104.8	205.9	411.3
<i>Support Facilities</i>					
Comfort Stations	61	72	191	256	580
Developed Spectator Seating	3,988	52,183	5,325	2,730	64,226
Equipment Concessions	20	8	52	40	120
Food Concessions	36	36	65	88	225
Summer Parking Spaces	27,350	19,861	49,232	55,055	151,498
Winter Parking Spaces	17,165	13,881	36,484	37,895	105,425
Stages/Band Shells	3	14	15	26	58
Visitor Centers	3	11	13	19	46

For the natural resources category, the Cape and Islands region was found to hold the greatest number of sites. In most cases, the differences were by large margins. With the exception of swimming pools, this was true for water-based activities as well. Findings were mixed in other areas, but it is noteworthy that the provision of golf facilities within the Cape and Islands and South Shore regions was considerably greater than for the North Shore region.

Table 5.13
Activities Available within the MCZM Region

Number of Sites:	North Shore	MDC	South Shore	Cape Cod	Total CZM
<i>Nat. Resource Activities</i>					
Camping	23	8	38	48	117
Hiking	177	142	498	523	1,340
Hunting	23	4	67	202	296
Organized Nat/Hist/Cult	18	23	32	49	122
Nature Observation	255	251	549	767	1,822
Picnicking	133	215	202	304	854
Sightseeing	33	151	67	171	422
Walking/Jogging	83	147	135	370	735
<i>Recreation and Sports</i>					
Archery/Target Ranges	7	3	50	33	93
Baseball/Softball	97	131	125	86	439
Football/Soccer	48	63	76	55	242
Golf	13	9	44	51	117
Other Team Sports	51	60	40	75	226
Org. Special Events	40	52	61	97	250
Tennis	73	132	140	92	437
Basketball	85	186	101	50	422
General Playground	135	400	161	92	788
<i>Transportation Activities</i>					
Bicycling	36	41	77	98	252
Four-wheeling	0	0	2	13	15
Horseback Riding	33	11	91	63	198
ATV/Motorcycling	6	4	8	12	30
Ice-skating	56	63	75	35	229
Skiing (downhill)	3	4	0	1	8
Skiing (X-Country)	72	20	81	37	210
Snowmobiling	12	3	12	3	30
<i>Water-Based Activities</i>					
Boating (motor)	127	66	236	380	809
Boating (non-motor)	163	78	299	457	997
Fishing (freshwater)	16	16	52	113	197
Fishing (saltwater)	75	41	113	292	521
Swimming (pools)	15	28	31	18	92
Swimming (freshwater)	6	7	25	68	106
Swimming (saltwater)	27	29	57	209	322



Photo by Susan Wilson

Other predominant facilities within that region were those that offered opportunities for bicycling, four-wheeling, ATV/motorcycling and the provision of organized special events. The presence of some facilities was noticeably low in the North Shore region.

Special Assessment Areas

Several aspects of the outdoor recreation, parks and conservation delivery system in the state were examined to provide insights beyond the inventory of areas, facilities, programs and activities. These included the identification of (1) sites with handicapped access, (2) recreation areas which are developed, (3) sites which could be expanded for recreation/conservation and (4) areas which could be expanded for future parking.

Handicapped Accessible Sites. In raw numbers, the largest number of areas identified with handicapped access were baseball/softball fields, tot lots, basketball courts and general open spaces. In terms of percentages of the total facilities available, however, less than one-quarter were identified as accessible for people with disabilities. Less than 25 percent of all comfort stations, band shells/stages,

Table 5.14
Number of Sites with Handicapped Access (Statewide)

	Areas (N)*	Areas w/ HP Access	Percent w/ HP Access
Natural Resource Areas Providing:			
Cabins	96	20	20.8
Hist/Cult/Arch Features	384	55	14.3
Natural Features	468	38	8.1
Nature Centers	94	18	19.1
Tent Sites	246	14	5.7
Trailer Sites	189	5	2.6
Picnic Tables	1,441	163	11.3
Shelters	250	63	25.2
Recreation Areas Providing:			
Archery Ranges	131	25	19.1
Basketball Courts	1,206	276	22.9
Baseball/Softball Fields	1,518	376	24.8
Football/Soccer Fields	846	211	24.9
General Open Space	1,505	263	17.5
Golf Courses	333	21	6.3
Playgrounds / Tot Lots	1,612	309	19.2
Tennis Courts	1,389	165	11.9
Skating Rinks	279	16	5.7
Swimming Pools	478	27	5.6
Ski Lifts	51	3	5.9
Trail-Based Areas Providing:			
Trails	1,064	61	5.7
Water-Based Areas Providing:			
Boat Ramps	506	59	11.7
Boat Slips	335	14	4.2
Freshwater Beaches	256	18	7.0
Saltwater Beaches	258	9	3.5
Tidal Frontage	808	0	0.0
Support Facility Areas Providing:			
Comfort Stations	977	248	25.4
Spectator Seating	323	72	22.3
Equipment Concessions	203	32	15.8
Food Concessions	487	109	22.4
Band Shells/Stages	132	34	25.8
Visitor Centers	126	33	26.2

*Represents areas, not number of facility units within each area

baseball/softball fields and football/soccer fields throughout the state were reported to be handicapped accessible.

Facilities exceeding the 25 percent level included cabins, basketball courts, spectator seating areas and food concessions. The remaining 21 facility types were reported to have access rates below the 20 percent level.

Furthermore, of the 808 areas identified under the category of *tidal frontage*, none were reported as being accessible to people with disabilities. The results of the handicapped access findings are summarized in Table 5.14.

Respondents were also asked to identify designated trails that were specifically designed for people with disabilities. For the state as a whole, 106 trails were identified. It is important to note that this question was left unanswered for more than 4,500 sites.

Developed Acres and Possibilities for Expansion. As is apparent in Table 5.15, the lowest percentage of developed sites was reported for the Berkshires and Cape and Islands regions. Neither of these regions reported that there were many sites which could be expanded and when asked if there were any physical barriers limiting development for future parking, respondents indicated that this was the case for 4,514 sites (Table 5.16). Expansion for recreational use was reported to be possible for 2,220 sites. Most completing the inventory did not respond to these items; thus, results in both cases may be under-represented.

Use Levels at Sites. Respondents were also asked to evaluate each site in relation to use levels. Table 5.17 summarizes these levels in terms of optimal use, over-use, and under-use. Numbers of sites and the percentages within each region are presented. Relatively few sites were perceived to be under-used; barely 10 percent fell into this category. Most were believed to be utilized under optimal conditions while over one-third were reportedly underused.

Table 5.15
Acres of Developed Sites by Region

Planning Region	Total Sites	Total Acres	Developed Acres	Percent Developed
The Berkshires	488	176,252.5	2,055.3	1.2
Connecticut Valley	1,284	268,828.9	12,952.3	4.8
Central	1,277	177,979.4	5,103.7	2.9
Northeastern	2,526	142,044.0	5,864.4	4.1
MDC	1,956	62,243.5	3,783.6	6.1
Southeastern	2,036	127,999.8	4,554.5	3.6
Cape & Islands	1,396	148,675.9	3,807.5	2.6
Statewide Total	10,963	1,104,024.0	38,121.3	3.5

Table 5.16
Sites with Expansion Possibilities by Region

Number of Sites:	Berk-shires 488	Conn Valley 1,284	Central Mass 1,277	NE Mass 2,526	MDC 1,956	SE Mass 2,036	Cape & Islands 1,396	State- wide 10,963
Assessment Factor								
<i>Can recreational use be expanded at site?</i>								
Yes	90	256	275	411	738	344	106	2,220
No	107	296	207	567	530	361	1,048	3,116
No Answer	291	732	795	1,548	688	1,331	242	5,627
<i>Are there factors limiting parking expansion?</i>								
Yes	106	335	301	771	1,369	492	1,140	4,514
No	91	189	213	291	223	257	204	1,468
No Answer	291	760	763	1,464	364	1,287	52	4,981

Table 5.17
Use Levels at Sites

Planning Region	Optimal N	Over N	Under N	Total N
The Berkshires	132	12	80	224
Percent	58.9	5.4	35.7	100.0
Connecticut Valley	281	60	226	567
Percent	49.6	10.6	39.9	100.0
Central	281	59	232	572
Percent	49.1	10.3	40.6	100.0
Northeastern	671	96	363	1,130
Percent	59.4	8.5	32.1	100.0
MDC	372	89	187	648
Percent	57.4	13.7	28.9	100.0
Southeastern	387	59	371	817
Percent	47.4	7.2	45.4	100.0
Cape & Islands	412	111	134	657
Percent	62.7	16.9	20.4	100.0
Statewide Total*	2,536	486	1,593	4,615
Percent	55.0	10.5	34.5	100.0

*Unclassified sites = 6,356

The Next Steps

The inventory of recreation, park and conservation areas and facilities makes it apparent that there are many highly valued resources throughout the state. From playgrounds to state parks, swimming pools to ski resorts, it is not surprising that Massachusetts serves its own residents as well as millions of tourists from other states each year. Are there enough resources? Are there weak spots? The relationships between the available resources (supply) and the needs of the residents of the Commonwealth (demand) will be addressed fully in the next two chapters. This will be followed by policy recommendations as well as suggestions for specific action programs at the state level.

Chapter Six

We the People

*Who would not rise to meet
the expectation of the land?*

Henry David Thoreau



Listening to the People

To estimate the demand for outdoor recreation in Massachusetts, it is necessary to analyze the frequency with which the state's residents and visitors make use of recreational facilities, and to determine how satisfied they are with the recreation opportunities that are available to them. Specifically, what do they most often do? How frequently do they participate, and where? What would they like to do more often? In this chapter, the methods used to estimate total demand are described, findings are presented for the state as a whole, for each of the seven planning regions, and in demographic and life-style contexts. Recommendations and priorities for action are suggested which consider each of these aspects of recreation demand.

Method

General estimates of the demand for outdoor recreation were developed by identifying reported participation and the desire for more participation in specific outdoor recreation activities among residents of the Commonwealth. These estimates also consider barriers to participation and dissatisfaction with opportunities to participate in those activities.

Demand estimates from residents were obtained through the administration of a statewide outdoor recreation survey of adults in Massachusetts using both probability and nonprobability samples. Similar estimates from tourists were beyond the scope of this project; however, reports from the Massachusetts Division of Tourism provided a basis for determining the impact of tourists on outdoor recreation resources. The statewide population was proportionately increased, for a given peak day, among the planning regions by over 300,000 people to simulate the effects tourists have on the outdoor recreation resources within the state.

A probability sample of 2,990 residents was obtained using random digit dialing procedures developed by the Atlantic Research Company. The sample was stratified by county, resulting in fourteen strata ranging in size from 103 to 305 respondents.

Because probability sampling would have yielded insufficient numbers of Blacks, Hispanics and persons with disabilities, three nonprobability samples were developed. Reverse telephone directories, which list telephone numbers within identifiable neighborhoods, were used to obtain samples from neighborhoods in Boston, Worcester and Springfield known to have high concentrations of Blacks and Hispanics. More than 300 Blacks and 300 Hispanics were interviewed through this nonprobability sampling process. The State Office of Handicapped Affairs provided the telephone numbers of individuals with disabilities,



Photo by Susan Wilson

which generated an additional 160 completed interviews. While nonprobability samples are not fully representative, they can be used in a general way to better understand the populations being sampled. For minorities, for example, generalizations should be limited to minorities within urban settings. For those with disabilities, it must be understood that only people who have been involved with the State Office of Handicapped Affairs were sampled. Included in Volume Two are the distributions of the probability and nonprobability samples, the calculations for tourist estimates, the margins of error for the sampling procedure and a complete copy of the demand survey.

The questionnaire was developed by Atlantic Research Company with the assistance of EOE agency staff, members of the Technical Advisory Committee, and the consultants from the University of Massachusetts. A key difference between this questionnaire and those of prior SCORP surveys is the use of open-ended questions to determine participation rather than the use of check-lists. The check-list approach tends to provide helpful reminders for respondents but also tends to inflate participation levels in cases where people state that they participated in an activity but, in actuality, it was not within the preceding twelve months. On the other hand, open-ended questions do tend to elicit responses which more accurately identify those activities which are most important to respondents. It must

be kept in mind that respondents may have participated in one or more activities that did not come to mind and, without prompting, these activities may have been missed. In fact, this occurred for the activity of picnicking which was under-represented because respondents seemed to have perceived it as more of an activity that *accompanies* primary activities. Thus, the results reported in this chapter tend to be conservative. Although it did not completely resolve this problem, to aid respondents in their recall abilities, they were asked to list up to four warm weather and four cold weather activities in which they participated during the preceding twelve months.

All interviewing was completed by Atlantic Research Company from its phone center in Boston during the months of August and September of 1987. The interviews were carried out primarily on weekdays from 5:00 to 9:30 p.m. Alternate times, weekday and weekend mornings and afternoons, were used to assure the inclusion of respondents who were not available during weekday evenings.

Survey Results

The demand for outdoor recreation activities is presented from geographic, demographic and lifestyle perspectives. General factors affecting demand are also discussed, including barriers to participation, awareness levels of state recreation areas, and preferences for state spending for outdoor recreation and conservation. More than 4,000 telephone numbers were selected in the total sample; successful interviews were completed with 66 percent of those in that sample.

Statewide Participation in Outdoor Recreation Activities

The demand analysis has been limited to the fourteen most popular activity groups. These were derived by combining thirty-nine specific activities into different activity groupings where a single type of area or facility could meet the demand for the activities within each group. The fourteen activity groups were then reduced to five clusters which are detailed in Table 6.1.



Photo by Julie Stone

Table 6.1
Participation Rates by Activity Groupings (Percent)

Activity Group	Percent Rate	Individual Activity
Water-Based:		
Swimming	50	Scuba Diving Snorkeling Swimming Water Sports
Boating	11	Board Sailing Boating Canoeing Power Boating Row Boating Sailing Water Skiing
Fishing	7	Freshwater Fishing Ice Fishing Saltwater Fishing
Trail-Based:		
Walk-Jog-Run	33	Jogging Running Walking
Bicycling	9	Bicycling
Winter-Based:		
Downhill Ski	15	Downhill Skiing
X-Country Ski	8	Snowshoeing X-Country Skiing
Ice-skating	8	Ice Hockey Ice-skating
Rec. or Field-Based:		
Tennis	8	Tennis
Golf	7	Golf
Field Sports	6	Field Hockey Football Frisbee Kite Flying Lacrosse Soccer Softball Volleyball
Nat. Resource-Based:		
Camping	6	Backpacking Camping Tent Camping Trail Camping
Hiking	4	Hiking
Picnicking	3	Picnicking

Demand Estimation Model

Calculations for the demand for outdoor recreation were carried out and expressed in *activity days*, or uses. The use of activity days as a measure provides important insights into the level of demand for outdoor recreation throughout an entire season. This incorporates both actual participation and desire for more participation. Critical to this analysis are the differences in participation patterns or activity days across the regions. These results are reported in Table 6.2.

Geographic Perspectives

Regional Findings. Regional demand estimates are frequently more useful than statewide estimates, offering managers at the regional and municipal levels a clearer view of forces which shape the services they provide. The results described below are based on reported and desired participation levels, on expressed dissatisfaction with existing opportunities and on travel times required to participate in activities.

Regional variations in the percent of the population participating in the most popular activity groups are presented in Table 6.3. Note that respondents were free to indicate participation in multiple activities. Throughout all regions, swimming and the grouping of walking, jogging and running ranked highest in popularity.

It is not enough to know that individuals participate in certain activities; *frequency* of participation must also be determined. Table 6.4 presents the *median* participation frequencies for the preceding 12 months. The median, rather than the mean, provides a more useful indicator of the mid-points of responses since the variations between high and low participation frequencies were extreme; i.e., some individuals participated in activities almost daily, which significantly raises averages. In this case, medians more accurately identify the actual midpoints of participations among respondents within each region.

Demand estimates must also consider the percent of the population wishing to participate more frequently in various activities. The desire to participate more frequently is an indicator of latent demand. The extent to which respondents would like to increase their participation in outdoor recreation activities is presented in Table 6.5. Positive changes in the quantity and quality of areas and facilities may have a direct impact on improving rates of participation. Improvements in other areas, such as in the availability of public transportation, could also remove key barriers to participation.

Table 6.2
Annual Activity Days of Participation
in Outdoor Recreation Activities by Region

Activity Group	Berk-shires N=239	Conn Valley N=501	Central Mass N=305	NE Mass N=431	MDC N=591	SE Mass N=478	Cape & Islands N=434	Statewide Total N=2,979
Boating	121,198	105,957	1,068,239	3,013,562	3,263,468	1,671,875	736,855	9,981,154
Fishing	183,223	887,492	547,047	1,903,302	1,185,405	504,109	542,054	5,752,632
Swimming	4,183,347	8,386,884	10,609,246	14,190,175	23,695,679	16,895,278	6,656,804	84,617,413
Bicycling	317,637	2,313,162	1,641,482	2,803,686	6,765,756	2,214,598	1,738,496	17,794,817
Walk-Jog-Run	7,178,747	18,217,824	9,367,163	19,377,796	58,617,170	28,707,035	6,820,252	148,285,987
Camping	13,216	417,171	313,327	455,639	362,828	752,485	28,291	2,342,957
Hiking	138,168	565,588	175,035	880,518	1,058,664	139,182	24,606	2,981,741
Picnicking	46,857	401,126	102,061	197,059	653,091	265,916	173,017	1,839,127
Downhill Ski	390,288	855,736	928,756	2,598,616	3,787,332	1,589,838	210,937	10,361,503
Ice-skating	176,277	551,549	326,510	795,926	1,585,511	1,079,505	141,933	4,657,211
X-Country Ski	108,132	668,544	186,261	795,926	1,436,403	308,915	140,625	3,644,806
Field Sports	132,724	1,169,952	1,211,124	2,291,012	3,882,761	1,774,281	185,440	10,647,294
Golf	87,106	1,113,126	1,627,874	1,960,978	3,733,654	1,499,313	456,467	10,478,518
Tennis	290,154	1,016,855	426,615	2,979,918	5,840,047	1,861,411	610,138	13,025,138

Table 6.3
Participation Rates in Outdoor Recreation
Activities by Region (Percent)

Activity Group	Berk-shires N=239	Conn Valley N=501	Central Mass N=305	NE Mass N=431	MDC N=591	SE Mass N=478	Cape & Islands N=434	Statewide Total N=2,979
Boating	6	10	7	15	11	10	13	11
Fishing	6	9	6	10	4	4	11	7
Swimming	46	47	51	49	46	53	55	50
Bicycling	5	8	9	8	9	7	14	9
Walk-Jog-Run	47	27	26	29	38	32	33	33
Camping	2	10	8	6	3	7	3	6
Hiking	5	7	4	6	5	2	2	4
Picnicking	3	6	3	1	4	2	4	3
Downhill Ski	17	12	12	19	18	13	11	15
Ice-skating	8	8	8	10	8	8	4	8
X-Country Ski	7	10	5	10	8	4	9	8
Field Sports	2	7	9	8	7	5	3	6
Golf	3	7	8	7	7	5	9	7
Tennis	7	6	5	7	11	8	10	8

Table 6.4
Median Annual Days Participated in
Outdoor Recreation Activities by Region

Activity Group	Berk-shires N=239	Conn Valley N=501	Central Mass N=305	NE Mass N=431	MDC N=591	SE Mass N=478	Cape & Islands N=434	Statewide Total N=2,979
Boating	12	15	20	15	14	15	23	15
Fishing	20	15	12	15	15	11	20	15
Swimming	60	26	30	22	25	28	50	30
Bicycling	45	40	25	25	38	26	50	30
Walk-Jog-Run	100	100	52	52	78	78	85	78
Camping	4	6	6	6	5	10	4	6
Hiking	20	12	7	12	10	6	6	10
Picnicking	12	10	5	15	9	10	21	12
Downhill Ski	15	10	10	10	10	10	7	10
Ice-skating	15	10	6	6	10	12	12	10
X-Country Ski	10	10	5	6	9	7	7	8
Field Sports	35	25	20	22	28	28	24	24
Golf	16	23	30	20	24	25	20	24
Tennis	28	26	12	30	25	20	25	25

Table 6.5
Desire for More Participation in Outdoor
Recreation Activities by Region (Percent)

Activity Group	Berk-shires N=239	Conn Valley N=501	Central Mass N=305	NE Mass N=431	MDC N=591	SE Mass N=478	Cape & Islands N=434	Statewide Total N=2,979
Boating	2	2	3	4	4	1	4	3
Fishing	1	1	2	2	0	1	1	1
Swimming	3	5	6	5	5	3	5	5
Bicycling	0	1	3	3	2	2	2	2
Walk-Jog-Run	0	1	2	2	1	1	1	1
Camping	0	2	1	1	1	1	1	1
Hiking	0	1	0	1	1	1	1	1
Picnicking	0	0	0	1	0	0	0	0
Downhill Ski	3	5	6	4	5	4	6	5
Ice-skating	1	1	3	3	1	1	4	2
X-Country Ski	0	1	2	3	1	0	1	1
Field Sports	2	1	2	1	1	1	0	1
Golf	1	1	0	3	2	0	2	1
Tennis	1	1	1	3	3	1	2	2

As noted earlier, the activities with the highest demand in all seven regions were swimming and the combination of walking, jogging and running. Demand levels for both activity areas were approximately equal within each region with the exception of the MDC region and the Berkshires where the demand for walking, jogging and running was nearly double that for swimming. The activities in greatest demand, then, are those requiring access to water or a network of trails, bikeways and paths. The demand for outdoor recreation, however, must also be viewed in the context of the percent of participants who are dissatisfied with opportunities to participate in various activities within the state. Table 6.6 summarizes this information.

Skiers residing in the four eastern regions expressed the highest levels of dissatisfaction with opportunities to downhill ski in Massachusetts. Due to the absence or low number of ski facilities in the eastern portion of the state, skiers from those regions must look elsewhere for skiing opportunities. Dissatisfaction with cross-country skiing in all but the Berkshires and Connecticut Valley region probably stems from the relatively poor snow conditions in the four eastern regions but may also be a reflection of the lack of facilities throughout the entire state, particularly facilities that are comparable to those available in Vermont and New Hampshire.

The next highest level of dissatisfaction was with the opportunities to camp in Massachusetts. Dissatisfaction was

greatest among campers residing in the Cape and Islands and Central regions and almost as strong in the other regions. According to these responses, many residents throughout the state feel that camping opportunities in the Commonwealth need to be improved.

Substantial dissatisfaction with picnicking was also reported in all regions but the Berkshires. Dissatisfaction with swimming was expressed in all but the Berkshire and Cape and Islands regions and boating and fishing were identified as areas of concern in all regions but the Cape and Islands. Of particular note were the relatively high levels of dissatisfaction with all activities among participants residing in the Northeastern and MDC regions.

Related to dissatisfaction with opportunities to participate is the time participants must travel to recreation sites since travel distance can act as a direct barrier to participation. Statewide, participants travel the greatest distances to downhill ski and to camp, which would be expected. There were fairly wide variations among regions, however. Regional proximity to ski facilities had a direct affect on travel time. Differences in travel time to downhill ski were predictably higher for skiers in the eastern regions of the state (see Table 6.7).

It is interesting to note that dissatisfaction was relatively high within the Northeastern region. The dissatisfaction level for all 14 activities was higher than was the case in most of the other regions.

Table 6.6
Dissatisfaction with Outdoor Recreation
Opportunities by Region (Percent)

Activity Group	Berk-shires N=239	Conn Valley N=501	Central Mass N=305	NE Mass N=431	SE MDC N=591	Cape & Mass N=478	Statewide Islands N=434	Total N=2,979
Boating	20*	33	17	45	23	17	3	23
Fishing	33*	15	40*	38	18	25*	15	24
Swimming	10	32	30	36	29	20	15	25
Bicycling	0*	29	0*	23	16	27	12	19
Walk-Jog-Run	7	17	22	29	13	10	13	15
Camping	33*	30	40	33*	30	27	50*	33
Hiking	0*	8	25*	46	25	0*	0*	18
Picnicking	0*	23	29*	29*	25	29*	25*	26
Downhill Ski	24	34	24	49	51	67	67	47
Ice-skating	0	60	29	37	10	13	17	24
X-Country Ski	7	7	44*	38	27	40	38	26
Field Sports	0*	0	0	46	20	14	0*	15
Golf	0*	9	27	13	17	8	11	13
Tennis	9	25	14*	19	22	11	31	20

* Sample too small (N<10) to yield meaningful results; presented for descriptive purposes only

The Coastal Zone. This section focuses on the extent to which state residents visit the Massachusetts coast and the degree to which they are satisfied with opportunities for access to the coast. The findings are reported in Table 6.8. These findings are generally consistent with those of the statewide Massachusetts Coastal Zone Management Survey conducted in 1982. Statewide, nearly half the population has visited the Massachusetts coast within the past year. Variation among regions was expected. The closer to the coast respondents lived, the greater the probability of their visiting the Massachusetts coastal beaches.

Virtually eight of ten respondents in the Southeastern Region and the Berkshires expressed high levels of satisfaction with coastal access and this percentage declined to a low of 58 percent for those in the Northeast. Given the importance of water-based activities to recreators throughout the state, it may be more revealing to focus on the extent to which satisfaction was *not* expressed; those percentages range from 42 percent in the Northeastern region to 20 percent in the Southeastern region. In a state with more than 6 million residents and extensive tourist activity, this means that a significant number of individuals feel that coastal access could be improved.

Table 6.7
Duration of Travel Time to Participate in Outdoor Recreation Activities by Region (Percent)

Activity Group	Berkshires N=239	Conn Valley N=501	Central Mass N=305	NE Mass N=431	MDC N=591	SE Mass N=478	Cape & Islands N=434	Statewide Total N=2,979
Boating	45	20	58	23	45	43	10	45
Fishing	20	18	30	15	30	45	15	34
Swimming	15	15	20	20	20	23	6	25
Bicycling	0	20	30	18	23	10	15	11
Walk-Jog-Run	20	30	15	45	20	15	25	10
Camping	*	85	105	120	120	60	180	109
Hiking	18	15	*	60	30	*	*	54
Picnicking	*	20	*	*	15	25	12	16
Downhill Ski	60	60	45	120	120	150	180	120
Ice-skating	15	10	10	15	10	10	10	10
X-Country Ski	20	20	20	30	30	70	20	30
Field Sports	*	13	5	10	10	5	10	10
Golf	*	15	18	20	15	15	10	15
Tennis	15	10	5	10	10	10	9	10

* Sample too small (N<10) to yield meaningful results

Table 6.8
Visitation Rates to Coastal Beaches and Satisfaction with Coastal Access by Region (Percent)

Region In Which Beachgoer Resides	Region Where Beachgoer Usually Travels				Percent Visiting Mass Coast	Percent Satisfied W/ Access to Coast
	NE Mass	MDC	SE Mass	Cape & Islands		
The Berkshires	12	5	3	79	26	77
Connecticut Valley	24	4	6	66	34	66
Central	18	6	11	65	49	65
Northeastern	72	4	4	21	62	58
MDC	16	31	10	43	54	68
Southeastern	3	9	37	51	50	80
Cape & Islands	1	0	4	95	60	69
Statewide Total	22	10	12	56	49	69

Demographic Perspective

Blacks, Hispanics and Persons with Disabilities. This section presents key findings on the demand for outdoor recreation among Blacks, Hispanics and persons with disabilities. These are based on nonprobability samples and cannot be generalized to all minorities or individuals with disabilities throughout the state. They are helpful in gaining insights about others with characteristics that are similar to those within each sample.

The participation patterns of Blacks and Hispanics indicate that both groups walk, jog or run, play field sports and picnic at higher levels than is the case for the state as a whole. In addition, participation levels in fishing and ice-skating were higher than average for Blacks and Hispanics, respectively, while Blacks, on average, participate in swimming at a level that is below the state as a whole.

Among persons with disabilities, participation levels in several activities were particularly notable. Swimming, walking/jogging/running, picnicking and fishing emerged as the most popular activities for this group. Participation results for all activities are presented in Table 6.9.

The median number of times members within each group participated in each activity within the past 12 months also indicate that, with few exceptions, Blacks, Hispanics and persons with disabilities participated less frequently than was the case for the general population. Again, however,

Table 6.9
Percentages Participating in Activities among Blacks, Hispanics and Disabled Individuals (Percent)

Activity Group	Blacks N=373	His-panics N=334	Dis-abled N=253	State-wide N=2,979
Boating	3	3	3	11
Fishing	8	4	5	7
Swimming	29	48	26	50
Bicycling	10	8	4	9
Walk-Jog-Run	39	38	18	33
Camping	3	2	1	6
Hiking	1	2	2	4
Picnicking	8	8	5	3
Downhill Ski	5	5	2	15
Ice-skating	4	9	0	8
X-Country Ski	1	3	1	8
Field Sports	11	17	2	6
Golf	1	1	1	7
Tennis	6	4	0	8

Non-probability sample; presented for descriptive purposes only

the median participations among Hispanics and persons with disabilities was greater than for the state as a whole for the activities of walking, jogging or running (Table 6.10). To repeat, comparisons to statewide patterns must be approached with caution since the samples for minorities and disabled individuals are not representative; they simply indicate areas that should be examined more carefully on a community-by-community basis.

Blacks, Hispanics and persons with disabilities also reported higher than average levels of latent demand in several activities. All three groups want to walk, jog or run more often, and both Blacks and Hispanics would like to participate more in swimming, bicycling and field sports. Blacks reported that they would like to skate, play tennis and fish more frequently. Persons with disabilities stated they would like to participate in picnicking more often. This information is detailed in Table 6.11.

For the activities in which they participate or wish to participate more often, Blacks, Hispanics and persons with disabilities expressed greater than average levels of dissatisfaction with several of the opportunities available in Massachusetts. Members of all three groups expressed a desire for improved opportunities to walk, jog or run. Both Blacks and Hispanics reported the need for improved bicycling and swimming opportunities, and Blacks expressed the need for improved skating, field sports and fishing opportunities (Table 6.12).

Table 6.10
Median Annual Days of Participation in Outdoor Recreation Activities among Blacks, Hispanics and Disabled Individuals

Activity Group	Blacks N=373	His-panics N=334	Dis-abled N=253	State-wide N=2,979
Boating	*	*	*	15
Fishing	10	18	10	15
Swimming	10	15	20	30
Bicycling	26	12	*	30
Walk-Jog-Run	65	104	89	78
Camping	*	*	*	6
Hiking	*	*	*	10
Picnicking	8	10	11	12
Downhill Ski	6	6	*	10
Ice-skating	*	12	*	10
X-Country Ski	*	*	*	8
Field Sports	12	20	*	24
Golf	*	*	*	24
Tennis	12	9	*	25

*Sample too small (N<10) to yield meaningful results

As mentioned earlier, travel time is a factor which may act as a barrier to participation. According to their responses (Table 6.13), the travel time to swimming sites for Blacks and Hispanics was reported to be substantially greater than for the state as a whole. Travel time was also greater for Blacks to play tennis and to fish.

Age Groups. This section describes how participation in outdoor recreation varies by age group. Several of the more important findings are presented here, particularly the participation patterns of baby boomers, a group primarily made up of the 25-34 and 35-49 year-olds. In estimating future needs, it is reasonable to assume that as this group ages, the societal changes of the past decade which encourage an active life-style will result in continued high levels of participation by them, at least through the five-year period covered by this document.

Compared to statewide averages, participation for these groups is above average for swimming, boating, bicycling, cross-country and downhill skiing, skating, camping, fishing and hiking, indicating there will be a continuing demand for these activities (Table 6.14). It should also be noted that demand for tennis may be on the increase, which would constitute a reversal of national trends. Unlike the 25-34 year-old group (which ostensibly contributed to some of the decline of tennis in the 1980s), the participation level among the youngest age group has rebounded and approaches the level of the 35-49 year-olds.

Table 6.11
Desire for More Participation in Activities by Blacks, Hispanics and Disabled Individuals (Percent)

Activity Group	Blacks N=373	His-panics N=334	Dis-abled N=253	State-wide N=2,979
Boating	*	*	*	3
Fishing	*	*	*	1
Swimming	6	5	3	5
Bicycling	*	3	*	2
Walk-Jog-Run	4	*	*	1
Camping	*	*	*	1
Hiking	*	*	*	1
Picnicking	*	*	*	0
Downhill Ski	*	5	*	5
Ice-skating	4	*	*	2
X-Country Ski	*	*	*	1
Field Sports	*	4	*	1
Golf	*	*	*	1
Tennis	3	*	*	2

*Sample too small (N<10) to yield meaningful results

Table 6.12
Dissatisfaction with Outdoor Recreation Opportunities Expressed by Blacks, Hispanics and Disabled Individuals (Percent)

Activity Group	Blacks N=373	His-panics N=334	Dis-abled N=253	State-wide N=2,979
Boating	*	*	*	23
Fishing	32	*	20	24
Swimming	35	28	22	25
Bicycling	27	33	*	19
Walk-Jog-Run	27	25	23	15
Camping	*	*	*	33
Hiking	*	*	*	18
Picnicking	19	43	8	26
Downhill Ski	55	35	*	48
Ice-skating	57	12	*	24
X-Country Ski	*	*	*	26
Field Sports	37	18	*	15
Golf	*	*	*	13
Tennis	13	*	*	20

*Sample too small (N<10) to yield meaningful results

Table 6.13
Travel Time to Participate in Outdoor Recreation Activities by Blacks, Hispanics and Disabled Individuals (Percent)

Activity Group	Blacks N=373	His-panics N=334	Dis-abled N=253	State-wide N=2,979
Boating	30	45	*	25
Fishing	48	20	20	20
Swimming	30	25	20	15
Bicycling	10	18	*	20
Walk-Jog-Run	15	15	15	20
Camping	*	*	*	120
Hiking	*	*	*	30
Picnicking	20	15	20	20
Downhill Ski	90	90	*	120
Ice-skating	*	10	*	10
X-Country Ski	*	*	*	30
Field Sports	15	10	*	10
Golf	*	*	*	15
Tennis	15	10	*	10

*Sample too small (N<10) to yield meaningful results

Swimming, walking/jogging/running and golf are particularly popular activities among those in the 50 and over age group. As the average age of the population continues to increase, the need for resources related to these activities will also grow and need considerable attention in terms of acquisition, management and maintenance factors.

Relatively high levels of dissatisfaction were expressed by those within the 25-34 year-old category for swimming opportunities, and by those between the ages of 18 and 34 for downhill skiing (Table 6.15). As would be expected, the desire for improvements was greatest in the younger age groups. Compared to statewide averages, the 25-34 year olds were generally the most dissatisfied group and, of course, among the most likely to be active.

Active vs Inactive Respondents. A final perspective from which to view the demand for outdoor recreation is that of active versus inactive lifestyles. The recent study completed by the President's Commission on Americans Outdoors examined lifestyle factors in the planning process. In this report, two lifestyles were discussed which were defined by the American College of Sports Medicine. The *active* person exercises vigorously at least three days weekly for at least twenty minutes each time and an *inactive* person (referred to as *sedentary* in the Commission's report) does not achieve that level of exercise. Not unexpectedly, a

greater percentages of active persons reported higher rates of participation in bicycling, tennis, downhill skiing, cross-country skiing, skating, boating and field sports. Findings are reported in Table 6.16.

Awareness of and Dissatisfaction with State Recreation Areas. Between 25 and 31 percent of Massachusetts residents stated that they were unaware of state-owned recreation areas, except in the Berkshires where a substantial 44 percent were unaware. Of those who indicated they were aware of these areas, only 6 to 8 percent stated they were dissatisfied with the quality of state-owned areas, with the exception of the Northeastern and Central regions where 15 and 13 percent, respectively, reported dissatisfaction.

Twelve percent of the state's population stated that there were not enough public campgrounds in Massachusetts. To obtain further insights, respondents stating that the number of campgrounds was insufficient were also asked where such campgrounds should be developed. One in four persons cited Berkshire county (Table 6.17). It must be kept in mind that out-of-state visitors and potential visitors were not included in this survey. While the state population was adjusted to take into account tourists, it was beyond the scope of this study to determine visitors' perceptions related to the adequacy of campgrounds in Massachusetts. It is

Table 6.14
Participation Rates in Outdoor Recreation
Activities by Age Group (Percent)

Activity Group	18-24 N=350	25-34 N=659	35-49 N=809	50+ N=1,051	Sample N=2,979
Boating	11	12	13	8	11
Fishing	4	10	8	5	7
Swimming	57	58	59	34	50
Bicycling	11	14	11	4	9
Walk-Jog-Run	27	24	31	41	33
Camping	4	8	7	3	6
Hiking	3	6	6	3	4
Picnicking	3	4	4	3	3
Downhill Ski	31	21	16	4	15
Ice-skating	15	11	11	1	8
X-Country Ski	7	8	10	6	8
Field Sports	19	10	4	1	6
Golf	6	6	5	9	7
Tennis	10	7	11	5	8

Table 6.15
Dissatisfaction with Outdoor Recreation
Opportunities by Age Group (Percent)

Activity Group	18-24 N=350	25-34 N=659	35-49 N=809	50+ N=1,051	Sample N=2,979
Boating	17	27	19	29	23
Fishing	29	18	25	28	24
Swimming	19	28	26	26	25
Bicycling	25	13	32	0	19
Walk-Jog-Run	10	21	11	16	15
Camping	25	33	19	19	33
Hiking	50	14	12	17	18
Picnicking	33	50	19	19	26
Downhill Ski	47	49	48	44	47
Ice-skating	32	13	30	14	24
X-Country Ski	17	18	24	38	26
Field Sports	15	15	21	11	15
Golf	14	11	18	12	13
Tennis	7	29	23	14	20

possible that inadequacies in this area limit the number of out-of-state visitors who camp in the Commonwealth. This should be fully researched in a separate study.

Outdoor Recreation Funding Preferences. Respondents were asked to express their preferences for how outdoor recreation funds should be spent in Massachusetts. The findings are presented in Table 6.18. Statewide, sentiments were approximately even on whether to spend more outdoor recreation funds on water-based or on land-based facilities. The only exception was in the Berkshire region where

Table 6.16
Participation Rates in Outdoor Recreation
Activities by Lifestyles (Percent)

Activity Group	Active N=1,582	Inactive N=1,397	Sample N=2,979
Boating	13	9	11
Fishing	7	7	7
Swimming	52	47	50
Bicycling	11	7	9
Walk-Jog-Run	35	31	33
Camping	6	6	6
Hiking	5	4	4
Picnicking	2	4	3
Downhill Ski	20	10	15
Ice-skating	9	6	8
X-Country Ski	9	6	8
Field Sports	8	4	6
Golf	9	5	7
Tennis	10	6	8

Table 6.17
Awareness and Dissatisfaction with State
Recreation Areas by Region (Percent)

Issue	Berk- shires N=239	Conn Valley N=501	Central Mass N=305	NE Mass N=431	MDC N=591	SE Mass N=478	Cape & Islands N=434	Statewide Sample N=2,979
Unaware of State Recreation Areas	44	25	27	25	30	30	31	29
Dissatisfied With State Rec Areas	6	7	13	15	8	8	6	9
Dissatisfied With Number of Public Campgrounds	11	13	12	14	11	9	15	12

residents favored land-based over water-based facilities by a margin of three to one.

When asked to express their preference whether funds should be spent for maintaining existing facilities or for developing new facilities, a majority of residents throughout the state favored the former while only one in five favored the latter. This was also consistent with preferences expressed by the majority of state facility managers.

Opinion was evenly divided throughout the state on whether spending should be directed toward recreation areas or conservation areas. However, there were regional differences. Those within the Berkshire region favored recreation by a margin of more than four to one and a similar preference was expressed by a margin of two-to-one by respondents within the Southeastern region. Conversely, those within the Cape and Islands and Connecticut Valley regions favored conservation by considerable margins.

Potential Barriers to Participation. Several other factors influence how planners view demand. Whether viewed by racial group, gender, persons with disabilities, active or inactive life-style, all want to swim more often and identified inadequate supply as the primary barrier. Tennis and ice-skating were also cited as activities these individuals want to do more often but cannot because of an inadequate supply of facilities.

Although inadequate supply constitutes the primary barrier, much higher than average percentages of women, Blacks and Hispanics cited poor safety as a barrier for walking, jogging, running and bicycling. Furthermore, across all groups, high expense was cited as a barrier to downhill skiing, boating and camping. Greater detail is reported in Volume Two.

Table 6.18
Regional Preferences for State Outdoor
Recreation Expenditures (Percent)

Planning Priorities	Berk- shires N=239	Conn Valley N=501	Central Mass N=305	NE Mass N=431	MDC N=591	SE Mass N=478	Cape & Islands N=434	State- wide N=2,979
<i>Preference for:</i>								
Water-Based Facilities	16	26	26	26	22	27	27	25
Land-Based Facilities	46	31	30	24	23	36	25	30
Both	30	34	26	35	42	29	31	33
<i>Preference for:</i>								
Maintaining Existing Areas	62	53	51	41	50	60	53	52
Developing New Areas	19	23	21	18	15	20	21	19
Both	13	17	18	33	24	14	18	20
<i>Preference for:</i>								
Recreation Areas	64	29	28	27	31	49	23	34
Conservation Areas	14	39	36	33	31	26	42	32
Both	13	23	27	33	28	19	28	25

Priorities for Action

Based on the results of the demand portion of this SCORP study, several recreation activity areas have been identified which should receive attention over the next five years. It is important to note that observations will take on greater meaning when considered in the context of the supply of outdoor recreation facilities which is addressed in Chapter Seven.

Trail-Based Activities

In all but the Central and Cape and Islands regions, opportunities to walk, jog or run were identified as the activities in greatest demand. While these activities can be done on ordinary sidewalks and streets, the experiences of participants are often enhanced when these activities are undertaken in natural settings such as in areas containing scenic trail systems.

Bicycling is also a highly demanded activity in all but the Berkshires and is also pursued close to home, often on municipal streets. The development of bikeways or bike trails would improve safety which was identified as a principal barrier to participation in this activity. The improvement of bicycle trail systems would also meet the needs of many walkers, joggers and runners. Because participation in these trail-related activities is high and often takes place close to home, local and state government will need to join forces if they are to be effective in providing new opportunities throughout the state.

Table 6.19
Barriers to Participation (Percent)

Activity Group	High Expense	Inadequate Supply	Poor Safety	Poor Maintenance
Boating	27	9	2	5
Fishing	3	6	6	19
Swimming	7	39	9	6
Bicycling	2	25	17	8
Walk-Jog-Run	0	19	16	24
Camping	16	4	0	4
Hiking	0	25	0	19
Picnicking	0	0	0	20
Downhill Ski	27	15	0	15
Ice-skating	0	64	4	17
X-Country Ski	24	29	0	18
Field Sports	0	16	0	16
Golf	11	8	0	14
Tennis	5	43	0	7

Water-Based Activities

The demand for swimming is high throughout the state. Both local and state planners should seek to develop creative approaches that will expand the opportunities for citizens to participate in this most popular of all activities. These facilities can be developed in the form of local swimming pools, such as those provided by the MDC's Metro Parks, or DEM regional facilities such as those within Lake Cochituate State Park.



Photo by Kathryn Smith

Residents of the Northeastern region expressed greatest dissatisfaction with public access to the coast. Boating is in relatively high demand in the four coastal zone regions, with particularly high demand in the Northeastern region. While the primary barrier to more boating was expense, improved public access in the form of boat ramps, moorings and marinas may relieve some of the pressure.

Fishing is also an activity in high demand within the Northeastern region. Combined with the high desire in that region for improved access to the coast and for more boating and swimming opportunities, attention should be given to acquiring or expanding facilities which accommodate all of these water-based activities.

Field-Based Activities

Tennis is one of the top five activities demanded in the Cape Cod and Islands, Southeastern, MDC, Northeastern and Berkshire regions. Tennis is generally played close to home, often at private clubs. Traditionally, it has been the responsibility of local government to provide such opportunities; however, the state may play a role by including tennis courts within its regional parks and by providing supplemental funding for facilities to be developed at the municipal level.

A noteworthy example of an effective regional facility is the Southwest Corridor Park in Boston, a narrow linear park which has tennis courts placed at intervals along its several mile route. The multiple-use of such a park accommodates tennis players, walkers, joggers, runners and bicyclists while simultaneously decreasing the fear of crime which was seen as a barrier to participation among women, Blacks and Hispanics.

Golf is a high demand activity in all but the Northeastern region and the Berkshires. Throughout all regions, private golf courses tend to charge relatively high fees. At the same

time, the number of publicly owned golf courses is relatively low. It is public courses that provide the general public with relatively low-cost opportunities to participate in golf. For that reason, public golf courses frequently have a regional draw. The demand for golf is especially high in urban areas; however, in the more densely populated areas of the state, real estate pressures have caused some privately owned courses that were open to the general public to be sold for development as housing. Private, state and local government partnerships are needed to address the problem of providing golf opportunities for the many who enjoy this activity, particularly those in the older age groups which continue to grow in numbers every year.

Field sports are also a high demand activity in the MDC, Southeastern and Central regions. Blacks were particularly dissatisfied with opportunities to participate in field sports. This suggests that residents within urban areas have greater needs in this regard. New open space acquisitions can serve the dual purpose of offering facilities for field sports and providing residents with attractive landscapes which address the needs of recreation and conservation proponents alike.

Winter-Based Activities

Downhill skiing is a high demand activity in both the MDC and Northeastern regions. High cost was cited as the primary barrier to skiing more often. However, although demand is high, state and local governments can do little to provide ski facilities in the eastern portion of the state. They can, however, strengthen opportunities in the central and western regions. State planners are encouraged to offer incentives to potential developers of new ski areas in those regions while, at the same time, improving the promotion of existing and new opportunities to residents throughout the state.

Other Natural Resource-Based Activities

Substantial demand for camping was reported in the Southeastern, Northeastern and Connecticut Valley regions. This is accompanied by relatively high levels of dissatisfaction with existing opportunities to camp in Massachusetts. Expanding the number of either public or private campgrounds, particularly in areas where large amounts of land are available at a cost which is not prohibitive, is strongly recommended.

Hiking is also in great demand, particularly in the MDC, Northeastern and Connecticut Valley regions, with high levels of dissatisfaction concerning hiking opportunities expressed by respondents within the first two. In the MDC region, picnicking is also in high demand along with a relatively high degree of dissatisfaction associated with opportunities for participating in that activity.

From Supply and Demand to Analysis

In many cases, demand is greatest for activities that can be jointly accommodated at multi-purpose sites. By developing and properly maintaining regional, multi-purpose outdoor recreation areas and facilities, the needs of many different types of recreators can be addressed. State and local planners should work together to develop regional outdoor recreation master plans that lead to the acquisition, expansion and maintenance of areas and facilities in locations that are accessible to most residents of the state. The geographic, demographic and life-style perspectives of outdoor recreation participation have provided insights into the current and future challenges the Commonwealth must address in order to improve the quality of life for its residents. In the next chapter, relationships between supply and demand and the findings of the other studies will be explored from regional as well as statewide perspectives.



Photo by Gene Peach

Looking Toward the Future

Conservation . . . can be defined as the wise use of our natural environment; it is, in the final analysis, the highest form of national thrift - - the prevention of waste and despoilment while preserving, improving and renewing the quality and usefulness of all our resources.

John F. Kennedy
Conservation Message to Congress



What We Have, What We Need

The preceding chapters focused primarily upon the current status of Massachusetts recreation, park and conservation resources and what the residents of the Commonwealth want. Within this chapter we now shift to the future by addressing three critical planning questions:

- What do the citizens of the Commonwealth want in terms of recreation and conservation?
- To meet this demand what does the Commonwealth need to provide and what are the priorities?
- What are the specific needs of the various planning regions across the Commonwealth?

First, a brief overview of the special planning considerations which were adopted is presented followed by an overview of the state's recreational capacity and the citizens' demand for recreation. Analyses of the municipal survey, the public demand survey and the inventory are integrated and evaluated for the state as a whole and for each planning region.

Information from the public demand survey tells us what citizens do and want to do more often. Information from the supply inventory tells what we are currently able to provide. However, this information, when taken alone and independently, does not identify the critical planning needs. Therefore, it is necessary to identify the magnitude of recreation and conservation needs in the context of a variety of factors. The process, called supply and demand analysis, integrates both supply and demand information by comparing the capacity of the recreation resources, expressed in terms of *activity uses* or *days*, to the recreational demands expressed within geographic regions. While most state plans stop at this point, further analyses were undertaken to include other qualitative factors (satisfaction with the availability of opportunities and travel time), citizen preferences related to certain key issues that directly affect them, and the identification of municipal managers' concerns for their respective communities. The specific methods developed for all aspects of the supply and demand analysis are presented in Volume Two.

How Issues are United

In the typical statewide outdoor recreation plan, *standards* are used to identify the capacity of outdoor recreation resources; that is, standards explain how many uses a recreation facility or resource can handle on a given day. The selected day is often referred to as a *design day* or a *peak day*. Standards used in supply and demand analysis include: *unit instant capacity measures* (how many people can use the recreation resource at one time), *turnover ratios* (how many times the facility or resource can be used in a day), and *design days* (the number of days of full use or

peak demand). How can the standard method of conducting supply and demand analysis be improved? Three adaptations were incorporated into the process. First, standards were varied according to the urban and rural characteristics of the planning region. Second, activity participation was adjusted by incorporating *latent demand* (the desire to participate more in an activity) in the analysis. Third, two *quality* dimensions were included; these were *dissatisfaction ratings* related to the provision of recreation and conservation services and facilities, and *travel barriers*.

The following section, then, incorporates four major elements: (1) a discussion of how supply and demand measures were modified, (2) an explanation of how public dissatisfaction with opportunities and travel barriers affecting participation were determined, (3) the identification of citizen attitudes toward certain bi-polar issues and (4) the integration of selected results extracted from the municipal survey. Each of these factors had a direct bearing on the formulation of priorities and recommendations provided in this study.

Modifying Supply and Demand Analyses in Urban and Non-Urban Settings

Urban and non-urban distinctions are important when considering capacity and use levels at selected types of recreational facilities as individuals hold different expectations for recreational experiences. Experiences often are affected by the nature of the setting, yet standards are frequently applied to activities without considering the nature of the environment. To adjust for differences, each of the standards, *instant capacity standards*, *turnover ratios* and *design days* were adjusted to reflect the character of the planning region. Adjustments were based on the distribution of urban and non-urban communities within each planning region. For example, the standards were weighted more heavily toward urban recreation standards if the region was predominantly urban such as within the MDC region. On the other hand, a more rural area, such as the Berkshires region, was weighted more heavily in favor of rural planning standards.

Instant capacity is defined as the number of persons which one recreation area or facility can handle at one time. These figures of instant capacity were largely drawn from the previous statewide outdoor recreation plans, sources in the literature and experts in the field. The following provides an example of how differences in carrying capacity occurred. The instant carrying capacity for shoreline saltwater fishing varies from seven persons per mile in urban areas to two persons per mile in non-urban areas. While, both areas may physically be able to handle recreational use at the higher level, the lower rates in the non-urban areas take into consideration the psychological and social carrying capacity of the area. One expects to

encounter and, to a certain degree, tolerate higher uses in more urbanized areas than in rural areas. Saltwater fishing from an MDC beach in the Boston area is quite different from saltwater fishing on a remote Nantucket beach. The expectations and the experiences are different and therefore should be reflected in the capacity standards. These adaptations were made for the majority of recreational activities.

Turnover rate refers to the number of sets of users a recreation facility can handle on a given design or peak-use day. These figures were obtained in a similar fashion as the instant capacity standards. For example, the turnover rate for tennis in urban areas is 8.0 uses per day, per court and for non-urban areas the rate is 5.7 uses per court per design day. Thus, for the Southeastern region, the weighted turnover ratio resulted in a ratio of 5.9 uses per court.

Design Day constitutes one day of full use of a recreation facility. The 1978 Massachusetts SCORP developed the methodology for the allocation of design days statewide. The overall impact of this analysis resulted in the definition of a "season" for each activity within each of the planning regions. The design day concept, as it is adjusted by activity and by region, is one of the critical inputs in the calculation of annual capacity. The annual capacity, or total number of uses, is then divided by the total number of design days to determine what the typical design day or peak-use day in activity uses (activity days) would be at each of the region's particular recreational facilities.

Demand in activity uses was compared to activity use capacity to determine the surplus or deficit in activity uses for one design day. To simplify this process, the surplus or deficit of activity uses was expressed as a percentage of the region's current carrying capacity for one design day. For example, if a surplus/deficit score was +85 percent for swimming, the region had surplus capacity which exceeded demand by 85 percent. On the other hand, if a region had a surplus/deficit score of -50 percent, the region would have to increase its capacity by 50 percent just to meet the current and future demands within the region.

Dissatisfaction and Travel Barrier Factors

Two other factors were taken into consideration which go beyond the normal scope of supply and demand analysis, *dissatisfaction ratings* and *travel barrier ratings*. Respondents were asked if they were dissatisfied with the opportunities to participate in specific recreation activities. These ratings were then compared to the average statewide dissatisfaction rating for each activity. This process, known as indexing, involves the identification of areas where dissatisfaction ratings are higher or lower than the statewide average. An index rating score of *more than 100 percent* identifies regions in which the citizens were more

dissatisfied with the opportunities than the statewide average. For example, a dissatisfaction index score of 150 percent for swimming would indicate that participants in that region have expressed dissatisfaction with opportunities for the activity at a rate 50 percent higher than the state average. These dissatisfaction ratings go beyond the normal supply and demand calculations to tell us the extent to which citizens are satisfied with existing opportunities.

Travel time is defined as the amount of time it takes to reach a location from a starting point, such as home or work, to participate in a particular recreational activity. For most activities, longer travel times have a negative effect on participation rates. Travel barriers may then be thought of as inhibitors or barriers to participation. Here, travel barriers are examined by region as a time-cost factor and are also indexed to the average statewide travel time for each activity. For example, a travel barrier index score of 180 percent for swimming would indicate that participants have an 80 percent higher travel time than the statewide average. The rationale behind this index is to identify activities and planning regions where travel times are above normal and to make recommendations to reduce travel time.

Weighting the Factors. Need priorities or rankings within each region were listed from highest (ranked 1) to the lowest (a ranking of 12). These rankings were composed of the surplus/deficit rating of each recreational resource, the dissatisfaction rating and the travel barrier rating. Each of these ratings was weighted in the following manner: surplus/deficit rating of each recreational facilities, a 50 percent weight; dissatisfaction rating, a 25 percent weight; and travel barrier, a 25 percent weight. Combined, these factors determined the need ranks for the state as a whole and within each region.

Municipal Issues and Priorities

The analysis was also extended to incorporate a regional identification of planning priorities of the twenty major planning issues which were discussed in Chapter Four. The identification of these regional planning needs was accomplished through a graphic analysis technique known as *Importance-Effectiveness Analysis*. Municipal managers were asked to rate the importance of each of the twenty planning issues and then to rate the perceived effectiveness of addressing these planning issues. The rated scores from each town were then combined into regional ratings for importance and effectiveness and placed onto a four-quadrant grid for interpretation. The quadrants have the following characteristics:



Photo by Jack Maley

High Priority. Issues that were important or extremely important by more than 50 percent of the communities and less than 60 percent of the communities indicated effectiveness in dealing with the issue.

Effective Work. Issues that were important or extremely important by more than 50 percent of the communities and at least 60 percent of the communities indicated effectiveness in dealing with the issue.

Low Priority. Issues that were important or extremely important by less than 50 percent of the communities and less than 60 percent of the communities indicated effectiveness in dealing with the issue.

Low Importance. Issues that were important or extremely important to less than 50 percent of the communities and at least 60 percent of the communities indicated effectiveness in dealing with the issue. (No issues were identified in this quadrant by any communities.)

Planning Issues and Public Views

One final step in bringing the information together was to integrate public preferences toward selected planning issues into the analysis. Three other specific state planning issues which were examined included awareness of state areas, dissatisfaction with state areas, and dissatisfaction with the number of public campgrounds. Citizens' responses to each of these issues are presented in Table 7.1. The responses are indicated in percentages within each region and are compared to the state average by an index rating presented in parentheses.

Findings and Recommendations

After all capacity standards and demand analysis procedures were finalized, they were applied to twelve of the most popular recreation activities in the Commonwealth which included (1) resource-based activities (camping, hiking and picnicking), (2) sports/recreation activities (field-based activities, golf and tennis), (3) water-based activities, (boating, fishing and swimming) and (4) winter-based activities, (downhill skiing, ice-skating and cross-country skiing). State and regional findings are presented, followed by concluding comments which are related to the state as a whole. Results are presented in Tables 7.3 - 7.10 and the planning priorities in Figures 7.1 - 7.8.

Table 7.1 Public Planning Preferences

	Berk- shires N=239	Conn. Valley N=501	Central Mass N=305	NE Mass N=431	MDC N=591	SE Mass N=478	Cape & Islands N=434	State- wide N=2,979
Preferences								
<i>Water-Based vs. Land-Based</i>								
Water-Based Facilities	16 (64)	26 (104)	26 (104)	26 (104)	22 (88)	27 (108)	27 (108)	25 (100)
Land-Based Facilities	46 (153)	31 (103)	30 (100)	24 (80)	23 (77)	36 (120)	25 (83)	30 (100)
Equal Emphasis	30 (91)	34 (103)	26 (79)	35 (106)	42 (127)	29 (88)	31 (94)	33 (100)
<i>Maintenance vs. Development</i>								
Maintaining Existing Areas	62 (119)	53 (102)	51 (98)	41 (79)	50 (96)	60 (115)	53 (102)	52 (100)
Developing New Areas	19 (100)	23 (121)	21 (111)	18 (95)	15 (79)	20 (105)	21 (111)	19 (100)
Equal Emphasis	13 (65)	17 (85)	18 (90)	33 (165)	24 (120)	14 (70)	18 (90)	20 (100)
<i>Recreation vs. Conservation</i>								
Recreation Areas	64 (188)	29 (85)	28 (82)	27 (79)	31 (91)	49 (144)	23 (68)	34 (100)
Conservation Areas	14 (44)	39 (122)	36 (113)	33 (103)	31 (97)	26 (81)	42 (131)	32 (100)
Equal Emphasis	13 (52)	23 (92)	27 (108)	33 (132)	28 (112)	19 (76)	28 (112)	25 (100)
<i>Other State Planning Issues:</i>								
Percent Unaware of State Areas	25 (86)	27 (93)	25 (86)	30 (103)	30 (103)	31 (107)	44 (152)	29 (100)
Percent Dissatisfied with State Areas	7 (78)	13 (144)	15 (167)	8 (89)	8 (89)	6 (67)	69 (67)	(100)
Percent Dissatisfied with Number of Public Campgrounds	13 (108)	12 (100)	14 (117)	11 (92)	9 (75)	15 (125)	11 (92)	12 (100)

(%) Indexed to statewide total.

Statewide

Supply and Demand Relationships. For a broad view of the recreational needs of the Commonwealth, we combined the ranked ratings of each activity within each group to arrive at an activity group rating for the state and for each region. In terms of four major groups of activities, sports and recreation and water-based activities were ranked as the number one and two need areas statewide. Winter-based recreational activities, as a group were identified as the third most important need and resource-based recreation activities were identified as the fourth most important need. However, these results represent only very broad findings. It is also important to examine each of the recreational activities within each planning region. The listing of needs by activity group and region is presented in Table 7.2.

While we have looked at broad groupings of recreational activities, we felt it was equally important to look at the specific recreational activities. As is apparent in Table 7.3, supply deficits in facilities and resources were found for boating, golf and tennis. The deficit is most pronounced for tennis which is short in capacity by approximately 85,000 uses or players per design day, or a shortage of 3,542 tennis courts. To meet current demand, the supply would need to be increased by nearly 73 percent. This was surprising since participation in tennis throughout the nation has been on the decline since the late 70s. If a downward trend continues, the priority given to tennis may not be critical. On the other hand, future trends indicate that the decline in tennis is slowing and the activity may be entering a new period of gradual growth. Regardless of national trends, at this time, the demand for tennis is greater in the Commonwealth than the supply of tennis facilities.

The second major priority area is golf. Current demand exceeds capacity by approximately 43,500 golfers per design day. This translates into a shortage of approximately 38 eighteen-hole golf courses. To correct this deficit, the current capacity for golf would have to be increased by 35 percent. However, golf courses are becoming very costly as the value of prime real estate has escalated within the state over the last decade. In fact, it is becoming increasingly more difficult to identify parcels of land large enough in the eastern portion of the Commonwealth to accommodate a standard 18-hole golf course. Although supply for golf is lacking, the current supply appears to be well located in terms of proximity to the population; the average travel time for participants is 19 minutes. While there is a deficit in terms of golf supply, statewide dissatisfaction levels are not high; only 13 percent of the participants indicated dissatisfaction with the opportunities to play golf. This deficit, however, should be addressed to avoid increases in dissatisfaction levels.

The third activity area in need of attention is boating. Demand is 33,000 boaters greater than supply which produces a deficit of approximately 16 percent. Indicative of a problem, approximately one-fourth of the boaters expressed dissatisfaction with the opportunities for boating in the Commonwealth. Furthermore, the average travel time needed to arrive at a location for boating is approximately 45 minutes. This is a problem throughout New England, Not just in Massachusetts and future predictions indicate that boating is likely to continue to increase in popularity. These three activity areas are prime candidates for public/private partnerships.

The balance between supply and demand for other recreation activities appears to be reasonable for the state as a whole. Nevertheless, there are a number of activities which have relatively high statewide dissatisfaction ratings

as expressed by participants. This indicates that although the supply may be adequate, the *quality* of the offerings provided within each region may be sub-standard. For example, nearly half of all downhill skiers are dissatisfied with the opportunities for skiing in the Commonwealth and it appears that a significant portion of them leave the state to ski elsewhere. The average travel time for skiing was 116 minutes, nearly two hours. Statewide dissatisfaction levels for camping (32.9%), cross-country skiing (26.3%),

Table 7.2
Statewide Recreation Needs
by Activity Group and Region

Activity Group	Region	State Need Rank
Sports/Recreation	Northeastern Massachusetts	1
Water-Based	Northeastern Massachusetts	2
Winter-Based	Cape & Islands	3
Winter-Based	Southeastern Massachusetts	4
Sports/Recreation	The Berkshires	5
Water-Based	Central Massachusetts	6
Water-Based	Connecticut Valley	7
Winter-Based	MDC	8
Water-Based	The Berkshires	9
Resource-Based	Central Massachusetts	10
Resource-Based	Cape & Islands	11
Resource-Based	Connecticut Valley	12
Sports/Recreation	Cape & Islands	13
Winter-Based	Connecticut Valley	14
Sports/Recreation	MDC	15
Sports/Recreation	Connecticut Valley	16
Water-Based	MDC	17
Sports/Recreation	Southeastern Massachusetts	18
Sports/Recreation	Central Massachusetts	19
Winter-Based	Central Massachusetts	20
Winter-Based	The Berkshires	21
Water-Based	Southeastern Massachusetts	22
Resource-Based	Northeastern Massachusetts	23
Resource-Based	The Berkshires	24
Water-Based	Cape & Islands	25
Resource-Based	MDC	26
Resource-Based	Southeastern Massachusetts	27
Winter-Based	Northeastern Massachusetts	28

ice-skating (26.1%) and swimming (25.4%) were also all relatively high. This seems to indicate that though supply may be adequate, there are shortcomings that are adversely affecting the public's views.

Finally, while some activities did not show deficits, we do know that they will continue to be in high demand and in need of facilities over the years. Statewide, there is particular concern for biking and walking. Both activities have seen dramatic increases in popularity and will need additional, safe facilities to an increasing extent, particularly within areas that are close to the homes of participants.

Local Planning Issues. Next we wanted to know if the recreation and conservation planning issues identified in the supply and demand analysis and through the public demand survey were also important to local administrators. When we examined the municipal managers concerns regarding the importance and the perceived effectiveness in dealing with recreation and conservation issues, a number of similarities in citizen responses were found. In rank-order of importance, the ten planning issues which municipal administrators felt were *not* being effectively addressed are:

- Development and expansion of recreation facilities
- Acquisition and protection of recreation areas
- Acquisition and protection of conservation areas
- Acquisition and protection of scenic areas
- Development and expansion of water-based facilities
- Acquisition and protection of wildlife habitat
- Development and expansion of handicapped access
- Development and expansion of trail corridors
- Management of outdoor recreation vehicles
- Provision of recreation programs for day care

Administrators indicated a slightly higher urgency for the development, acquisition and protection of recreation and conservation areas. The protection of scenic areas and wildlife habitat were also very important concerns among the majority of administrators. Issues which were perceived as being extremely important and are being effectively addressed were acquisition and protection of wetlands, cultural resources, water supplies and liability issues. See Figure 7.2 for the categorization of planning issues.

Table 7.3
Statewide Supply and Demand Analysis

Activity Group	Demand (act. days)	Carrying Capacity (act. days)	Need (S-D=Need) (act. days) ¹	Deficit Surplus ²	Dis-satisfied (percent)	Travel Barrier (minutes)	State Need Rank
Resource-Based:							
Camping	42,722	100,920	58,198	57.7%	33.0%	109	9
Hiking	43,915	292,184	248,269	85.0%	18.0%	54	12
Picnicking	59,402	368,295	308,893	83.9%	26.0%	16	11
Sports/Recreation:							
Field-Based Activities	144,190	227,640	83,450	36.7%	15.0%	10	6
Golf	167,881	124,344	-43,537	-35.0%	13.0%	15	2
Tennis	202,074	117,000	-85,074	-72.7%	20.0%	10	1
Water-Based:							
Boating	243,692	210,670	-33,022	-15.7%	23.0%	45	3
Fishing	99,943	199,857	99,914	50.0%	24.0%	34	8
Swimming	2,959,499	4,401,972	1,442,473	32.8%	25.0%	25	4
Winter-Based:							
Downhill Skiing	294,747	454,664	159,917	35.2%	47.0%	120	5
Ice-skating	64,846	105,734	40,888	38.7%	24.0%	10	7
X-Country Skiing	119,406	292,184	172,778	59.1%	26.0%	30	10

¹ Positive number indicates amount of surplus in activity uses; negative indicates amount of shortage per design day.
² Percentage is based on the proportion of current supply; positive percentage indicates surplus, negative indicates a deficit.

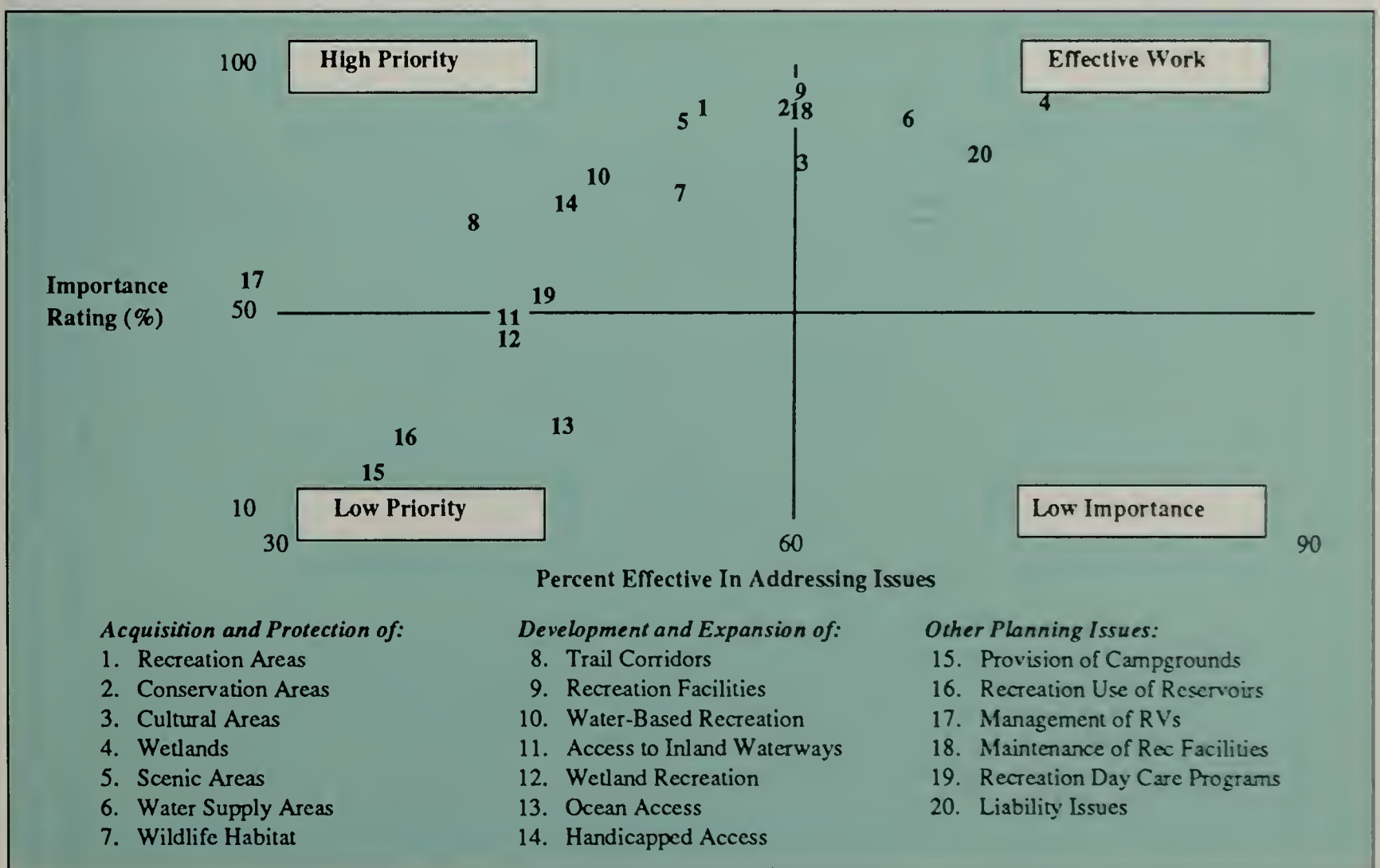
Public Planning Preferences. In the demand survey, citizens were asked to express their preferences for how they would like the state funds to be spent on each of the following pairings: (1) water-based or land-based facilities, (2) maintenance or development of areas and (3) emphasis on conservation or recreation.

On the first of these three issues, there was a slight preference for land-based facilities (30 percent for land-based facilities to 25 percent for water-based facilities). However, an additional one-third indicated a preference for both. While no clear mandate was found here, it appears that the Commonwealth should put equal emphasis upon both types of facilities. On the other hand, a clear signal was sent by the majority of citizens to put more emphasis upon maintaining existing areas as opposed to developing new areas. Finally, no clear mandate was made in reference to a preference for recreation or conservation. However, regional differences do exist which are presented in Table 7.1 and referred to throughout the remainder of the chapter for each of the planning regions.



Photo by Julie Stone

Figure 7.1
Recreation and Conservation Issues:
Importance/Effectiveness Ratings



The Berkshires



Supply and Demand Relationships. The Berkshires is the only region in the Commonwealth where supply exceeds demand for all of the recreational activities examined. The two activities with the smallest surplus are tennis and swimming. All other activities had surplus figures in excess of 50 percent. Nevertheless, citizens in this region expressed high levels of dissatisfaction for fishing and camping and five activities have travel time ratings greater than the statewide average: field-based activities, camping, swimming, golf and tennis. Strategically located, regional facilities which provide opportunities for a variety of field games and sports could be of particular value to the residents and visitors who seek recreation within this region.

Local Planning Issues. The issues which local administrators felt were of high importance but which were not being effectively addressed were numerous. The top five in rank-order of importance are:

- Acquisition and protection of conservation areas
- Acquisition and protection of recreation areas
- Acquisition and protection of scenic areas
- Acquisition and protection of cultural areas
- Management of outdoor recreation vehicles

Several other issues were also in the high priority category. They included acquisition and protection of water supply areas, development and expansion of water-based recreation, development and expansion of handicapped access, and development and expansion of trail corridors.

Public Planning Preferences. Citizens within this region have reinforced the need for improvements in recreational facilities (Table 7.1). While this region has an abundance of conservation and forest areas, citizens have indicated a much higher preference for land-based facilities (53 percent higher than the state average), a higher preference for maintaining existing areas (19 percent higher than the state average) and a pronounced higher preference for increased emphasis on recreation areas (88 percent higher than the state average). The dissatisfaction with public campgrounds among the region's residents, however, was only eight percent higher than the state average.

Table 7.4
Supply and Demand Analysis

Activity Group	Demand (act. uses)	Carrying Capacity (act. uses)	Need (S-D=Need) (act. uses) ¹	Deficit Surplus ²	Dis- satisfaction Index	Travel Barrier Index	Regional Need Rank
<i>Resource-Based:</i>							
Camping	282	11,236	10,954	97.5%	101.2%*	161.0%*	4
Hiking	2,166	47,290	45,124	95.4%	0.0%*	27.7%	12
Picnicking	1,166	27,846	26,680	95.8%	0.0%*	51.2%*	10
<i>Sports/Recreation:</i>							
Field-Based Activities	2,138	9,996	7,858	78.6%	0.0%*	316.7%*	1
Golf	1,378	6,605	5,227	79.1%	0.0%*	125.2%*	8
Tennis	4,852	7,528	2,676	35.5%	46.0%	120.5%	2
<i>Water-Based:</i>							
Boating	3,404	10,246	6,842	66.8%	85.5%*	92.1%	6
Fishing	2,772	10,300	7,528	73.1%	138.8%*	74.3%	4
Swimming	132,805	217,136	84,331	38.8%	38.6%	129.6%	3
<i>Winter-Based:</i>							
Downhill Skiing	8,357	151,724	143,367	94.5%	51.3%	61.6%	9
Ice Skating	3,120	7,302	4,182	57.3%	0.0%	83.1%	7
X-Country Skiing	1,914	47,290	45,376	96.0%	25.7%	20.2%	11

¹ Positive number indicates amount of surplus in activity uses; negative indicates amount of shortage per design day.
² Percentage is based on the proportion of current supply; positive percentage indicates surplus, negative indicates a deficit.
 * Sample too small (N<10) to yield meaningful results; presented for descriptive purposes only.

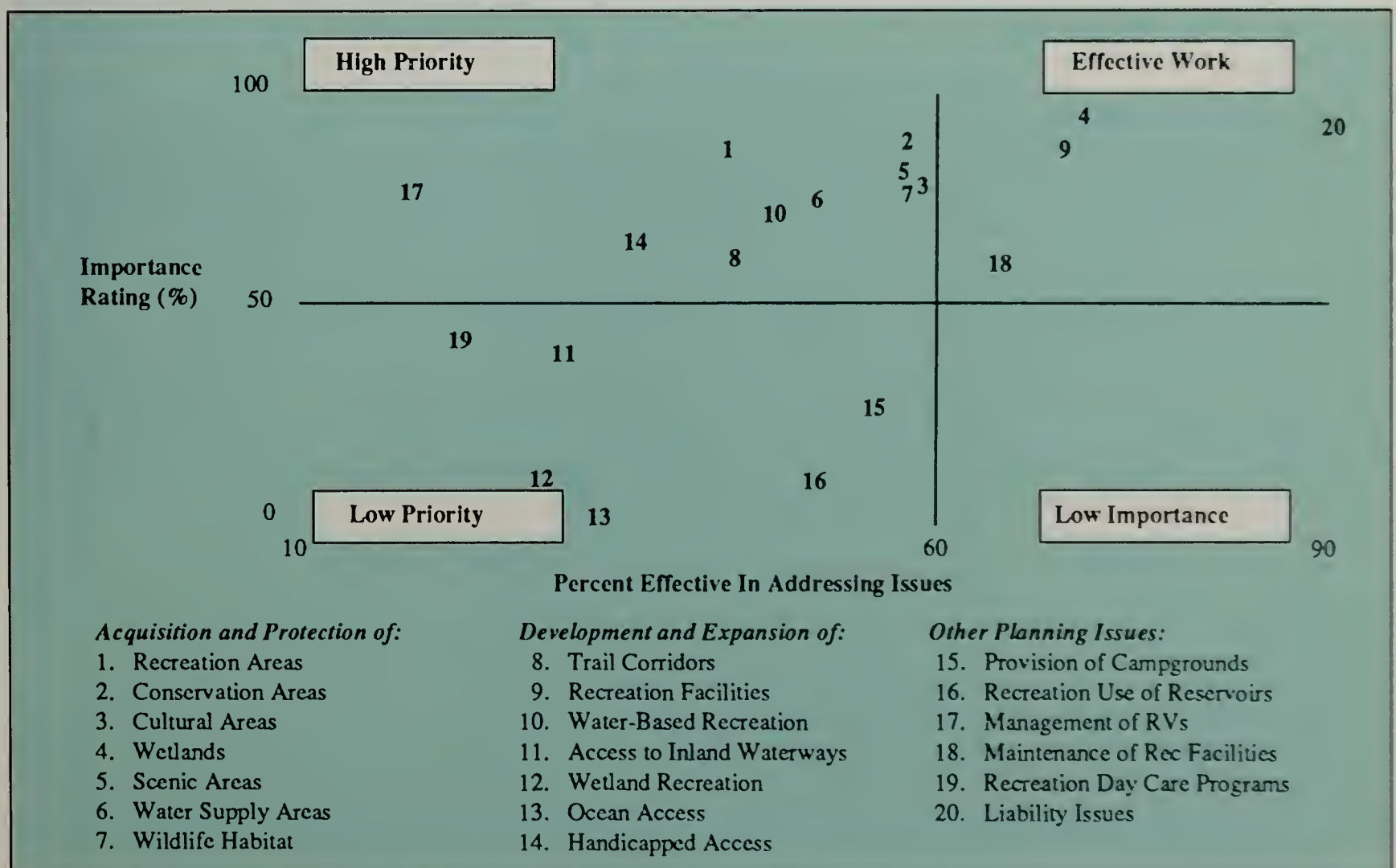
Summary and Recommendations. Residents within the Berkshires region are fortunate to have what appears to be an excess supply of recreational resources relative to the region's population. However, this excess supply may be off-set by the heavy influx of tourists during the year. Therefore, it appears that efforts to acquire and protect important recreation and conservation areas within the region must be continued especially as development spreads and land becomes more costly and scarce.

The biggest need among the citizens appears to be in sports/recreation and water-based activities. This was reinforced in the supply and demand analysis and the public demand survey. There are not deficits in these areas, but the problems appear to relate to accessibility and satisfaction with the current quality of opportunities. In addition, local administrators appear to be more concerned with preservation and conservation issues such as the protection of conservation, scenic and cultural areas. This appears to be a reflection of the growth and development of the rural areas within this region. Finally, of all regions, municipal administrators in the Berkshires expressed the greatest concern for the management of outdoor recreation vehicles.

Planning recommendations for the Berkshires region include:

- Market and promote opportunities for outdoor recreation (the excess supply capacity) to other regions
- Improve water-based recreation opportunities within the region, particularly for swimming and fishing
- Develop strategically located, field-based recreational facilities that serve as regional sites
- Expand recreational facilities while preserving conservation, cultural, and scenic areas
- Develop site plans for the management of outdoor recreation vehicles
- Continue programs that place high priorities on the acquisition and protection of recreation and conservation resources

Figure 7.3
Importance of and Effectiveness in
Addressing Recreation and Conservation Issues



Connecticut Valley



Supply and Demand Relationships. The Connecticut Valley region is deficient in two major areas: boating and swimming. The boating deficit is 120 percent below its current supply and the deficit for swimming is 18 percent. Furthermore, citizens expressed high levels of dissatisfaction with the opportunities for both boating and swimming. The high priority rankings for swimming and tennis were reinforced with high dissatisfaction ratings and high travel times. Ice-skating, although an activity with a surplus in supply, generated very high dissatisfaction ratings among its residents, ratings that are nearly 150 percent greater than the state average.

Local Planning Issues. The issues which administrators felt were of high importance but which were not being effectively addressed were numerous for the Connecticut Valley region. The top five in rank-order of importance are:

- Acquisition and protection of conservation areas
- Development and expansion of recreation facilities
- Liability issues
- Maintenance of recreation facilities
- Acquisition and protection of scenic areas

There were several other issues which also fit into the high priority category including the acquisition and protection of cultural areas, development and expansion of water-based recreation, development and expansion of handicapped access, management of outdoor recreation vehicles, development and expansion of trail corridors and development and expansion of access to inland waterways.

Public Planning Preferences. While it is not clear whether citizens within this region prefer an emphasis for land-based or water-based facilities, it appears that a balanced emphasis would be appropriate. On the other hand, there is a clear preference for maintaining existing areas compared to developing new areas although it should be noted that the percentage indicating a preference for acquiring new areas is 21 percent higher than the state average. There is slightly higher preference for more emphasis upon conservation. Citizens may feel that a stronger emphasis on the development of new recreation and conservation areas is extremely important in terms of the current growth and development pressures within the region (some of the Commonwealth's faster growing communities are in this region). The need for new areas and an increased emphasis on conservation appears to be reinforced by the relatively high levels of dissatisfaction with state areas and facilities in the region (44 percent higher than the state average).

Table 7.5
Supply and Demand Analysis

Activity Group	Demand (act. uses)	Carrying Capacity (act. uses)	Need (S-D=Need) (act. uses) ¹	Deficit Surplus ²	Dis-satisfaction Index	Travel Barrier Index	Regional Need Rank
Resource-Based:							
Camping	8,876	12,232	3,356	27.4%	91.2%	87.7%	6
Hiking	8,317	38,533	30,216	78.4%	45.1%	60.1%	12
Picnicking	9,285	66,790	57,505	86.1%	88.5%	108.0%	7
Sports/Recreation:							
Field-Based Activities	17,005	44,436	27,431	61.7%	0.0%	83.2%	10
Golf	15,848	18,150	2,302	12.7%	68.4%	101.0%	5
Tennis	14,780	15,222	442	2.9%	126.3%	152.6%	3
Water-Based:							
Boating	23,347	10,618	-12,729	-119.9%	142.3%	94.7%	1
Fishing	13,427	35,681	22,254	62.4%	62.5%	85.5%	8
Swimming	297,407	251,764	-45,643	-18.1%	127.6%	120.7%	2
Winter-Based:							
Downhill Skiing	21,447	97,080	75,633	77.9%	71.7%	64.1%	9
Ice-skating	7,080	17,376	10,296	59.3%	246.9%	100.1%	4
X-Country Skiing	16,755	38,533	21,778	56.5%	25.7%	41.8%	11

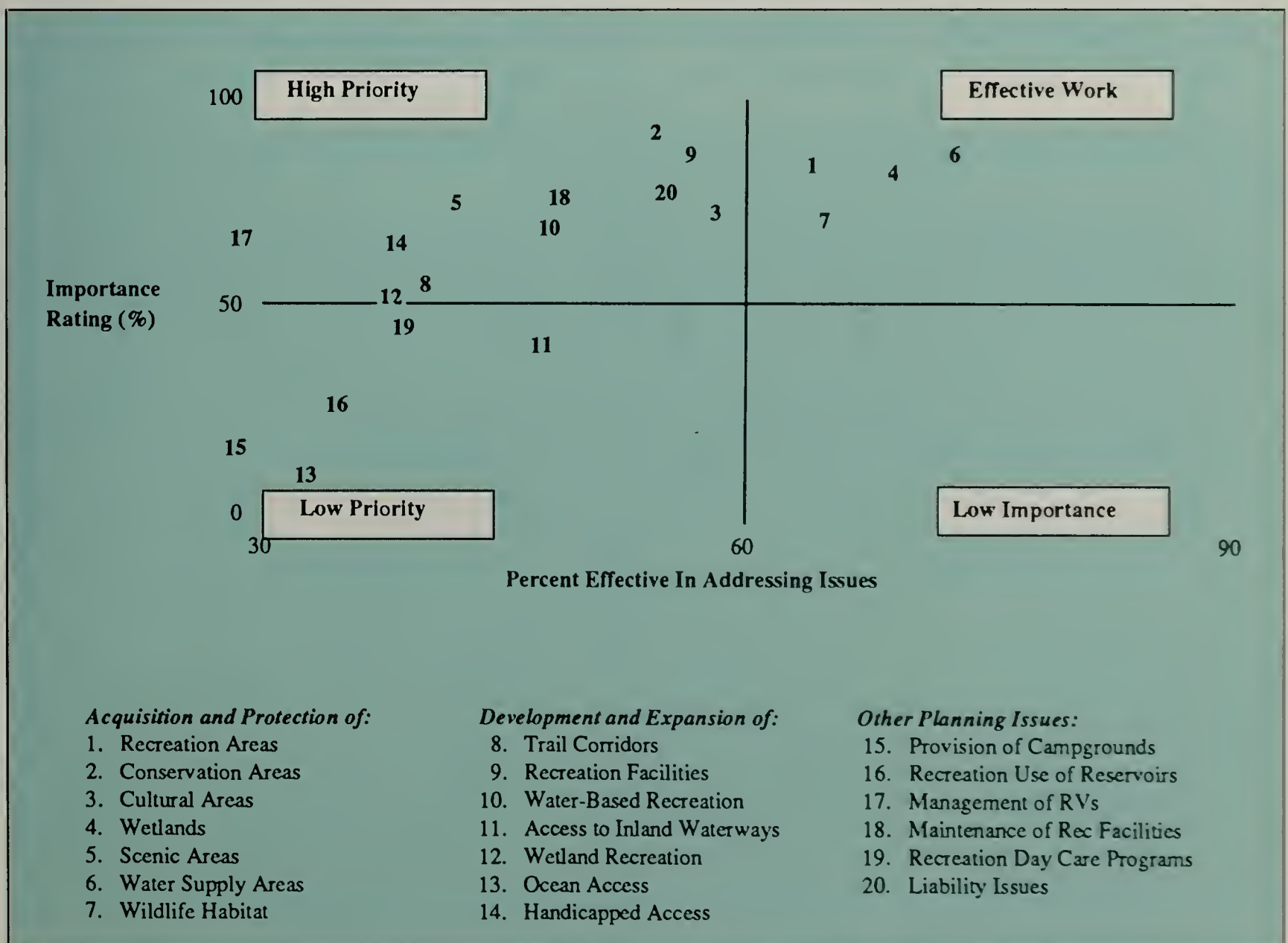
¹ Positive number indicates amount of surplus in activity uses; negative indicates amount of shortage per design day.
² Percentage is based on the proportion of current supply; positive percentage indicates surplus, negative indicates a deficit.

Summary and Recommendations. An important priority within this region relates to water-based recreation activities. While citizens are mixed in their preferences for spending on water vs. land-based facilities, the supply and demand analysis revealed a deficit which was reinforced by high dissatisfaction levels and travel times reported by the general public. Furthermore, local administrators reinforced this issue in the high priority ratings for the development and expansion of water-based recreation facilities and expanded access to inland waterways. There was some evidence that more of an emphasis should be placed upon conservation in this region. Indications from both local administrators and citizens tend to favor an emphasis on conservation. The administrators' ratings of the effectiveness for acquiring and protecting scenic areas were significantly lower here than in most of the other regions.

Planning recommendations for the Connecticut Valley region include:

- Improve and develop more water-based recreation facilities for boating and swimming and increase access to inland waterways
- Improved the maintenance of local and regional recreational facilities
- Develop and expand recreational facilities across the region with a particular emphasis upon selected recreational activities (tennis, field-based activities and ice-skating) and actively promote existing opportunities for ice-skating in particular
- Maintain a strong emphasis upon preserving the character of the region through the protection of conservation, cultural and scenic areas
- Develop educational programs which assist towns and cities in dealing with liability issues, possibly drawing on the expertise of administrators from other regions where these problems are being effectively addressed
- Develop a strategy to improve the quality of the state-owned and operated facilities and more vigorously promote these facilities within the region

Figure 7.4
Importance of and Effectiveness in
Addressing Recreation and Conservation Issues



Central Massachusetts



Supply and Demand Relationships. The Central Massachusetts region has three activity areas with deficits: boating, golfing and swimming. The need is most critical for boating where a deficit of 120 percent of current supply exists. This supply deficit is reinforced by a higher than state average travel time for boating (51 percent higher). The need for an increased supply of golf courses is reinforced with dissatisfaction ratings 100 percent higher than the state average and travel times slightly higher than the state average. There is also a shortage of swimming facilities and citizens have indicated higher than average dissatisfaction ratings with the opportunities for swimming and higher than average travel times. Although, there is sufficient supply for the resource-based activities of hiking, camping and picnicking, dissatisfaction ratings and travel times were higher than the state averages for these activities. In fact, citizens within this region expressed relatively high levels of dissatisfaction with the majority of activities in this region. Very high levels of dissatisfaction were also reported for cross-country skiing (70 percent higher than the state average) and fishing (67 percent higher than the state average).

Local Planning Issues. The issues which administrators felt were of high importance but which were not being effectively addressed within the Central Massachusetts region are related to acquisition, protection and development and appear to reflect concerns associated with growth in the region. The top four issues in rank-order of importance are:

- Acquisition and protection of conservation areas
- Development and expansion of recreation facilities
- Acquisition and protection of recreation areas
- Acquisition and protection of water supply areas

There were several other issues which also fit into the high priority category including management of outdoor recreation vehicles, acquisition and protection of wildlife habitat areas, development and expansion of water-based recreation, development and expansion of trail corridors, and development and expansion of handicapped access.

Public Planning Preferences. Citizens within this region have indicated a higher preference for land-based facilities than water-based facilities, but those indicating a preference for water-based facilities indicated a higher preference than the state average. While there is a clear preference for the maintenance of existing areas compared to the development of new areas, the percentage indicating a preference for new areas is 11 percent higher than the state average. A slightly

Table 7.6
Supply and Demand Analysis

Activity Group	Demand (act. uses)	Carrying Capacity (act. uses)	Need (S-D=Need) (act. uses) ¹	Deficit Surplus ²	Dis- satisfaction Index	Travel Barrier Index	Regional Need Rank
Resource-Based:							
Camping	5,656	23,368	17,712	75.8%	121.6%	108.4%	9
Hiking	4,917	37,858	32,941	87.0%	135.9%*	193.8%*	5
Picnicking	2,867	88,475	85,608	96.8%	109.6%*	348.3%*	4
Sports/Recreation:							
Field-Based Activities	16,939	28,602	11,663	40.8%	0.0%	82.8%	12
Golf	24,224	14,413	-9,811	-68.1%	200.8%	107.2%	2
Tennis	5,967	11,234	5,267	46.9%	72.2%*	46.0%	10
Water-Based:							
Boating	25,374	11,492	-13,882	-120.8%	71.4%	150.6%	1
Fishing	8,276	21,893	13,617	62.2%	166.7%*	83.9%	7
Swimming	359,635	291,239	-68,396	-23.5%	118.1%	139.2%	3
Winter-Based:							
Downhill Skiing	24,900	48,300	23,400	48.4%	49.6%	71.3%	11
Ice-skating	4,712	12,522	7,810	62.4%	117.7%	94.0%	8
X-Country Skiing	4,994	37,858	32,864	86.8%	170.1%*	121.5%	6

¹ Positive number indicates amount of surplus in activity uses; negative indicates amount of shortage per design day.
² Percentage is based on the proportion of current supply; positive percentage indicates surplus, negative indicates a deficit.
 * Sample too small (N<10) to yield meaningful results; presented for descriptive purposes only.

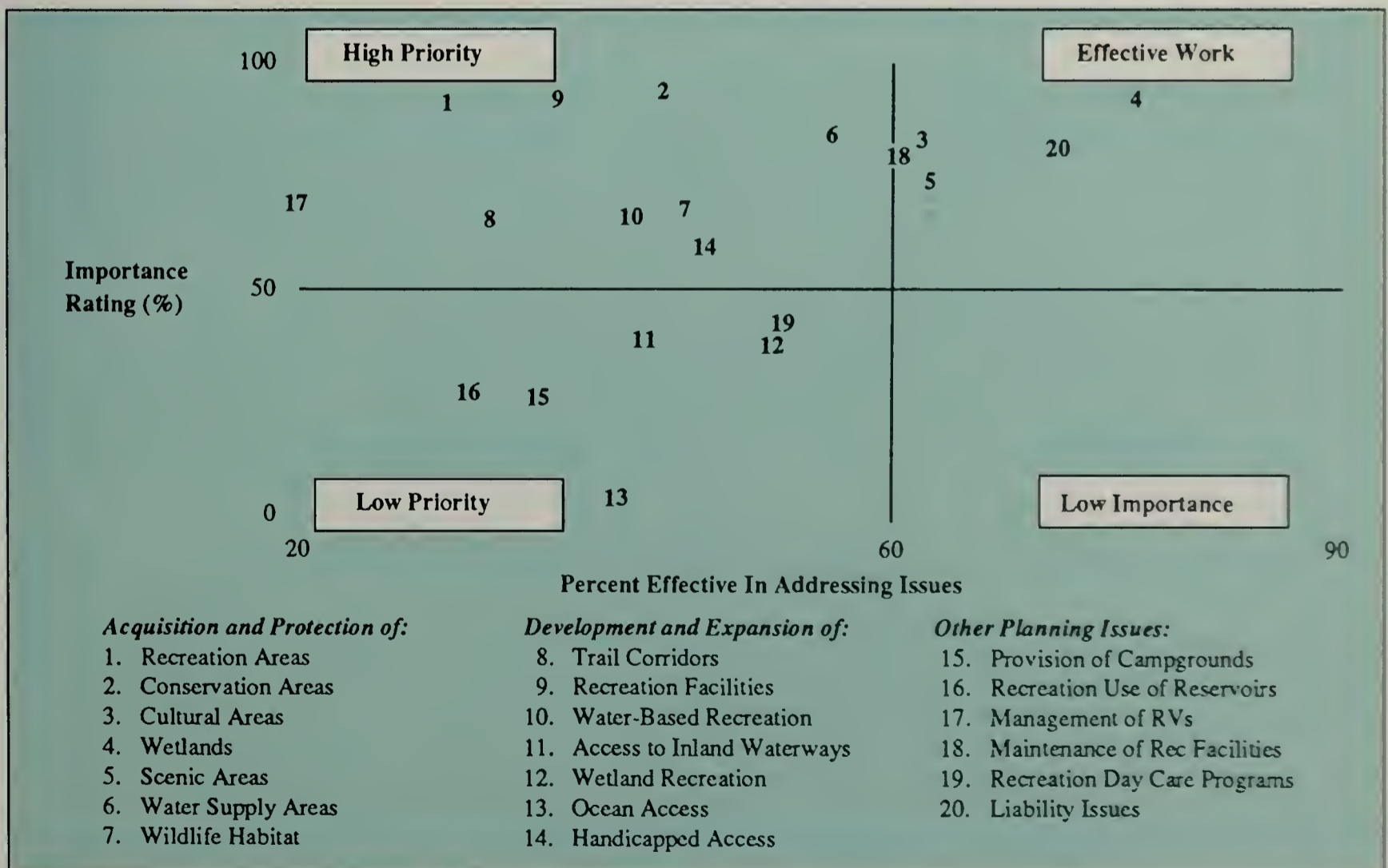
higher preference for an emphasis on conservation exists among the citizens of this region. Dissatisfaction with state areas was 67 percent higher than the state average and dissatisfaction with public campgrounds was 17 percent higher than the state average.

Summary and Recommendations. One of the highest priorities identified in the supply and demand analysis was the need for an increased emphasis upon water-based recreation facilities. Although there was a lack of agreement in regard to participant preferences for land or water-based facilities, local administrators perceived the effectiveness of developing and expanding water-based recreation areas to be low and the importance of this planning issue as very high. The growth and development in this region is a concern of both citizens and administrators who both expressed a preference for acquiring and protecting conservation, water supply and wildlife habitat areas.

Planning recommendations for the Central Massachusetts region include:

- Improve opportunities for water-based recreation for such activities as boating, fishing and swimming
- Develop and expand trail corridor programs which increase hiking and cross-country skiing opportunities
- Develop strong facility maintenance programs
- Maintain a strong emphasis upon preservation of conservation and water supply areas
- Improve the image of state-owned and operated facilities with particular emphasis upon facilities which provide picnicking, hiking, fishing and boating opportunities
- Encourage public-private partnerships, particularly for the development of golf courses and tennis courts

Figure 7.5
Importance of and Effectiveness in
Addressing Recreation and Conservation Issues



Northeastern Massachusetts



Supply and Demand Relationships. Within Northeastern Massachusetts, there were deficiencies in supply for tennis, boating, fishing and golf. The supply deficit is highest for tennis (77 percent of current supply), followed by boating (59 percent of current supply), fishing (36 percent of current supply) and golf (16 percent of current supply). While all other recreational activities hold sufficient supply, citizens within this region expressed relatively high levels of dissatisfaction with all but two of the activities. Very high levels of dissatisfaction were reported with the opportunities for field-based activities (204 percent higher than the state average), hiking (147 percent higher than the state average), cross-country skiing (94 percent higher than the state average), picnicking (92 percent higher than the state average) and boating (91 percent higher than the state average). Travel times were higher than the state average for eight of the recreational activities.

Local Planning Issues. The issues which administrators felt were of high importance but which were not being effectively addressed were numerous.

The top five issues in rank order of importance are:

- Maintenance of recreation facilities
- Acquisition and protection of recreation areas
- Expansion of water-based recreation facilities
- Liability issues
- Acquisition and protection of scenic areas

Other issues which also fit into the high priority category include the development and expansion of trail corridors, acquisition and protection of cultural areas, acquisition and protection of wildlife habitat areas, development and expansion of handicapped access, access to inland waterways, management of outdoor recreation vehicles and the provision of recreational day care programs. The expressed effectiveness in managing outdoor recreation vehicles was particularly low in this region.

Public Planning Preferences. Citizens within this region were approximately evenly divided in their spending preferences for water-based and land-based facilities. While more people expressed a higher concern for maintaining existing recreation and conservation areas, there was a tendency to place more of an equal emphasis on maintenance and the development of new areas compared to those in other regions. A balanced approach to spending for

Table 7.7
Supply and Demand Analysis

Activity Group	Demand (act. uses)	Carrying Capacity (act. uses)	Need (S-D=Need) (act. uses) ¹	Deficit Surplus ²	Dis-satisfaction Index	Travel Barrier Index	Regional Need Rank
Resource-Based:							
Camping	8,952	11,064	2,112	19.1%	101.2%*	127.4%	7
Hiking	13,715	76,099	62,384	82.0%	247.3%	100.1%	8
Picnicking	4,562	42,347	37,785	89.2%	191.6%*	92.2%*	11
Sports/Recreation:							
Field-Based Activities	33,692	50,484	16,792	33.3%	303.9%	120.1%	3
Golf	28,838	24,942	-3,896	-15.6%	94.0%	110.6%	5
Tennis	43,822	24,742	-19,080	-77.1%	94.9%	111.9%	2
Water-Based:							
Boating	65,088	40,850	-24,238	-59.3%	191.0%	92.4%	1
Fishing	28,794	21,177	-7,617	-36.0%	156.3%	114.5%	4
Swimming	439,324	518,376	79,052	15.2%	139.8%	99.0%	6
Winter-Based:							
Downhill Skiing	68,027	129,960	61,933	47.7%	104.2%	88.4%	12
Ice-skating	10,244	29,209	18,965	64.9%	151.0%	104.6%	10
X-Country Skiing	20,836	76,099	55,263	72.6%	193.5%	107.0%	9

¹ Positive number indicates amount of surplus in activity uses; negative indicates amount of shortage per design day.
² Percentage is based on the proportion of current supply; positive percentage indicates surplus, negative indicates a deficit.
 * Sample too small (N<10) to yield meaningful results; presented for descriptive purposes only.

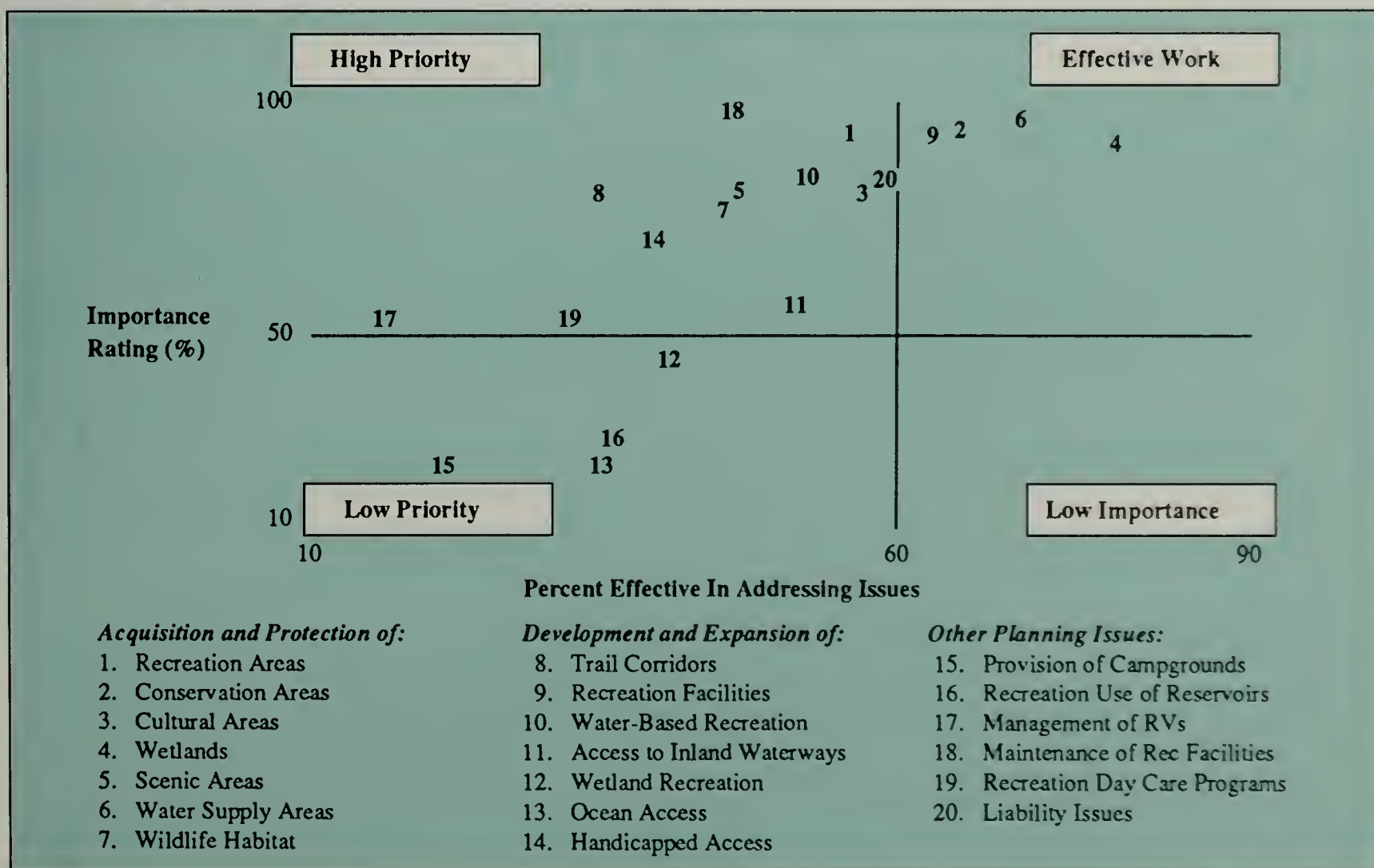
recreation and conservation was also expressed. Finally, citizens were slightly less aware of state-owned areas compared to residents in other regions.

Summary and Recommendations. A balanced approach to maintenance and development and to conservation and recreation would best suit this region. Improvement in the maintenance and quality of nearly all types of recreation facilities is a high priority. Development of sports/recreation and water-based facilities should be emphasized in new state and local programs. The expressed importance of water-based recreation priorities was significantly higher than in other regions.

Planning recommendations for the Northeastern Massachusetts region include:

- Improve water-based recreation opportunities for such activities as boating and fishing and increase access to coastal and inland waterways
- Improve maintenance of recreation facilities through the development of incentive programs
- Improve opportunities for tennis and golf through public-private partnerships
- Increase and improve the opportunities for quality experiences for cross-country skiing, picnicking and hiking
- Maintain a balance between acquisition and development of both recreation and conservation areas
- Develop educational or technical assistance programs which help towns and cities deal with liability issues, possibly drawing on the expertise of administrators from other regions where these problems are being effectively addressed
- Develop site plans for the management of outdoor recreation vehicles within the region

Figure 7.6
Importance of and Effectiveness
in Addressing Recreation and Conservation Issues



MDC



Supply and Demand Relationships. The MDC region showed deficiencies in supply for downhill skiing, fishing, tennis, camping, boating, golf, cross-country skiing and field-based activities. Little can be done to improve the deficiency in down-hill skiing and, to some extent, the same holds true for fishing and camping. However, many other activities can and should be addressed. The problems are most severe for tennis, golf and boating. Citizens expressed fairly high levels of dissatisfaction with seven activities particularly with cross-country ski opportunities. Travel times to participate were also higher than the state average for seven recreational activities.

Local Planning Issues. The high priority planning issues which were not being effectively addressed by at least 60 percent of respondents' communities within the MDC region were not as numerous as was the case in the other regions. The four highest-ranked issues are:

- Development and expansion of water-based recreation facilities
- Development and expansion of trail corridors
- Provision of recreational day care programs
- Development and expansion of wetland recreation

While high importance was placed upon many other planning issues, a larger percentage of the cities and towns within this region indicated higher levels of effectiveness in dealing with the issues. This may be for at least two reasons. First, larger allocations of state funds have generally been more available to urban communities. If this has been the case for communities within this region, they would be more likely to have worked out solutions to problems that, due to a lack of economic resources, other communities have not been able to address. Second, a greater number of residents in urban communities may simply expect that recreation and conservation services will be provided at a quality level. The greater the number of residents, the greater the need for these services and the greater the likelihood that they will receive a higher priority than in rural areas.

Public Planning Preferences. A plurality of citizens within this region expressed a clear preference for balancing expenditures for water-based and land-based facilities and a majority preferred placing a greater emphasis on maintaining existing recreation and conservation areas rather than developing new ones. Views were evenly divided in terms of expenditure preferences for recreation vs. conservation. Finally, citizens were slightly less aware of state areas than residents of most of the other regions.

Summary and Recommendations. This region has a number of important deficiency problems among the twelve recreation activities that were examined. However, little can be done to change this situation in some cases. For

Table 7.8
Supply and Demand Analysis

Activity Group	Demand (act. uses)	Carrying Capacity (act. uses)	Need (S-D=Need) (act. uses) ¹	Deficit Surplus ²	Dis-satisfaction Index	Travel Barrier Index	Regional Need Rank
Resource-Based:							
Camping	7,128	2,588	-4,540	-175.4%	91.2%	100.7%	6
Hiking	16,490	35,476	18,986	53.5%	135.9%	109.2%	10
Picnicking	15,118	26,231	11,113	42.4%	95.8%	62.3%	11
Sports/Recreation:							
Field-Based Activities	57,099	54,864	-2,235	-4.1%	131.6%	113.8%	8
Golf	54,907	21,123	-33,784	-159.9%	130.8%	124.5%	4
Tennis	85,883	29,380	-56,503	-192.3%	112.1%	93.6%	3
Water-Based:							
Boating	70,485	27,098	-43,387	-160.1%	96.6%	144.0%	5
Fishing	17,934	4,590	-13,344	-290.7%	75.8%	119.6%	2
Swimming	733,612	872,885	139,273	16.0%	115.7%	117.5%	9
Winter-Based:							
Downhill Skiing	116,533	17,200	-99,333	-577.5%	106.5%	94.0%	1
Ice-skating	18,372	26,897	8,525	31.7%	42.4%	79.3%	12
X-Country Skiing	46,797	35,476	-11,321	-31.9%	257.5%	94.1%	7

¹ Positive number indicates amount of surplus in activity uses; negative indicates amount of shortage per design day.
² Percentage is based on the proportion of current supply; positive percentage indicates surplus, negative indicates a deficit.

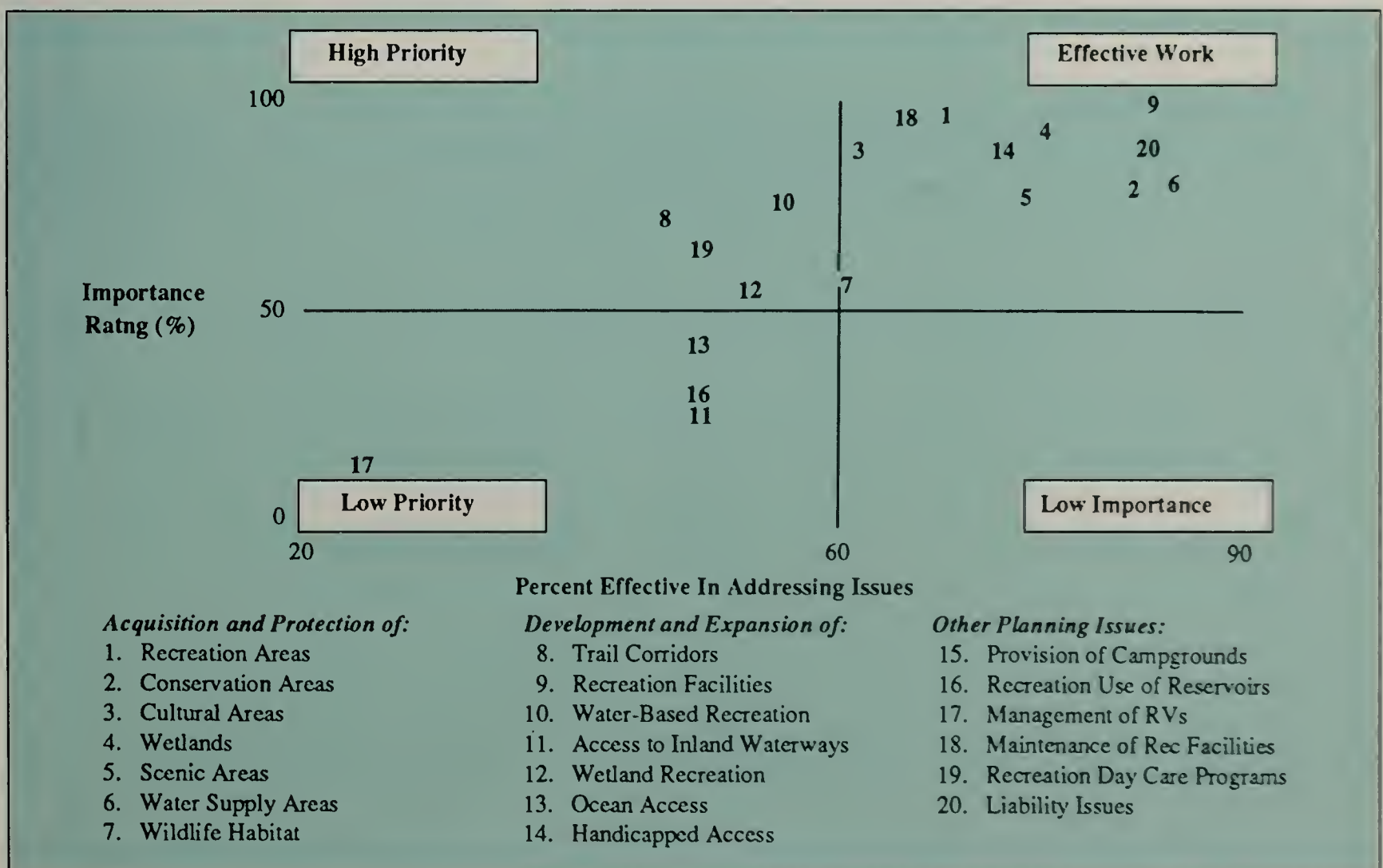
example, it is not possible to provide opportunities for downhill skiing within this region. The prospects for developing opportunities for camping are also not likely; rather, it would be more appropriate to market other regions which provide facilities for these activities.

The most important need in terms of recreation resources within this region is for sports and recreational facilities, particularly for tennis, golf and field-based activities. The importance of this need as expressed by administrators was significantly higher than all other regions with the exception of the Southeastern region. However, many issues appear to be more effectively addressed within this region. Also, the concerns that were identified as important and not being effectively addressed were quite different compared to the concerns raised in the other regions. These included such issues as provisions of recreation day-care center programs and the development and expansion of wetland recreation. Finally, based on the low number of areas they identified which are not being effectively addressed, administrators do not appear to be fully aware of the magnitude of deficiencies and dissatisfaction levels among residents.

Planning recommendations for the MDC region include:

- Improve water-based recreation opportunities for such activities as boating and fishing
- Increase and improve opportunities for hiking, cross-country skiing and picnicking
- Maintain a balance between acquisition and development of recreation and conservation areas
- Improve maintenance of recreation facilities through the development of incentive programs
- Market opportunities at state-owned facilities
- Improve opportunities for land-based recreation, particularly for golf, tennis and field-based events
- Offer incentives to recreation agencies that develop day care programs with recreational components
- Examine the feasibility of extending outdoor recreation opportunities within wetland recreation areas for such activities as hiking, nature observation, photography and cross-country skiing
- Promote opportunities for downhill skiing and camping that are provided in other regions of the state

Figure 7.7
Importance of and Effectiveness in
Addressing Recreation and Conservation Issues



Southeastern Massachusetts



Supply and Demand Relationships. The Southeastern Massachusetts region had deficiencies in supply for downhill skiing, tennis and ice-skating. Relatively little can be done to accommodate the problems with the lack of supply for downhill skiing other than to promote other regions where excess supply exists. Citizens within this region expressed relatively high levels of dissatisfaction with downhill skiing (42 percent higher than the state average) and cross-country skiing (158 percent higher than the state average). Travel times were higher than average for seven of the recreational activities and much higher than the state average for cross-country skiing and hiking.

Local Planning Issues. The issues which administrators felt were of high importance but which were not being effectively addressed were numerous. The top five issues in rank-order of importance are:

- Development and expansion of recreation facilities
- Maintenance of recreation facilities
- Acquisition and protection of water supply areas
- Acquisition and protection of recreation areas
- Acquisition and protection of conservation areas

There were several other issues which also fit into the high priority category. These include development and expansion of water-based recreation, acquisition and protection of wildlife habitat and scenic areas, development and expansion of handicapped access, and development and expansion of trail corridors.

Public Planning Preferences. Citizens within this region expressed a slightly higher planning preference for land-based facilities expenditures. They also preferred spending more for maintaining existing recreation and conservation areas, and emphasized recreation over conservation areas. There was high dissatisfaction with public campgrounds from the residents of this region. Finally, citizens are slightly less aware of state-owned areas than residents of other regions.

Summary and Recommendations. The development and expansion of recreation opportunities is of high importance within this region. Although there are not large deficiencies, the importance of the acquisition, protection and expansion of recreation opportunities was significantly higher than most of the other regions. The provision of water-based recreation opportunities is also a high priority for residents in this region.

Table 7.9
Supply and Demand Analysis

Activity Group	Demand (act. uses)	Carrying Capacity (act. uses)	Need (S-D=Need) (act. uses) ¹	Deficit Surplus ²	Dis-satisfaction Index	Travel Barrier Index	Regional Need Rank
Resource-Based:							
Camping	12,521	18,412	5,891	32.0%	81.2%	70.1%	9
Hiking	2,011	27,513	25,502	92.7%	0.0%*	188.0%*	11
Picnicking	5,936	48,307	42,371	87.7%	109.6%*	58.4%	12
Sports/Recreation:							
Field-Based Activities	25,456	35,406	9,950	28.1%	94.1%	57.6%	8
Golf	21,087	28,058	6,971	24.8%	57.9%	109.2%	7
Tennis	26,706	21,614	-5,092	-23.6%	56.1%	56.5%	4
Water-Based:							
Boating	33,041	43,644	10,603	24.3%	73.5%	103.8%	5
Fishing	7,626	25,157	17,531	69.7%	104.2%*	154.4%	6
Swimming	496,920	838,334	341,414	40.7%	79.9%	76.0%	10
Winter-Based:							
Downhill Skiing	88,324	10,400	-77,924	-749.3%	141.8%	117.5%	1
Ice-skating	12,944	10,653	-2,291	-21.5%	51.4%	105.3%	3
X-Country Skiing	17,162	27,513	10,351	37.6%	258.2%	214.3%	2

¹ Positive number indicates amount of surplus in activity uses; negative indicates amount of shortage per design day.
² Percentage is based on the proportion of current supply; positive percentage indicates surplus, negative indicates a deficit.
 * Sample too small (N<10) to yield meaningful results; presented for descriptive purposes only.

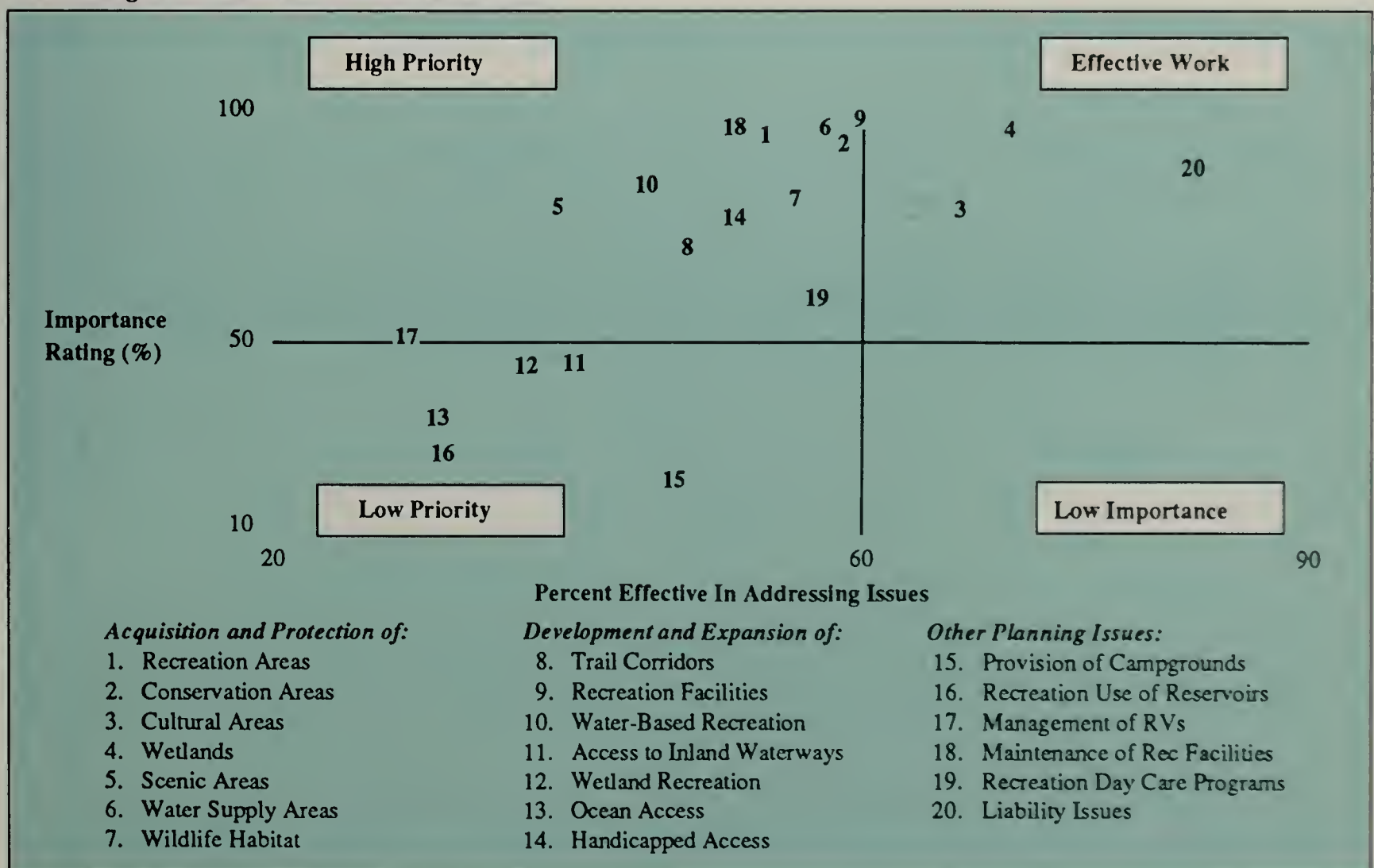
Planning recommendations for the Southeastern region include:

- Market other regions in the state where opportunities exist for winter-based activities such as downhill and cross-country skiing
- Improve the opportunities for water-based recreation and increase access points to water
- Place a high priority on the acquisition and development of recreation rather than conservation areas as funds for these resources become available
- Maintain a balance between the development of land-based recreation and water-based facilities
- Develop a marketing program aimed at improving the awareness of state-owned facilities
- Improve maintenance of recreation facilities through the development of incentive programs



Photo by Pamela Bailey

Figure 7.8
Importance of and Effectiveness in
Addressing Recreation and Conservation Issues



Cape Cod and Islands



Supply and Demand Relationships. The Cape Cod and Islands region had deficiencies in supply for downhill skiing, tennis, golf and ice-skating. Citizens within this region expressed high levels of dissatisfaction with downhill skiing (42 percent higher than the state average), tennis (58 percent higher than the state average), and camping (52 percent higher than the state average). Travel times were higher than the state average for six of the recreational activities and noticeably higher than the state average for downhill skiing. Nothing can be done to address the lack of supply for downhill skiing, of course, except to promote other regions where excess facilities exist; thus, despite the high need, downhill skiing has not been included in the ranking of activities in Table 7.10.

Local Planning Issues. The two planning issues which administrators felt were of highest importance but which were not being effectively addressed within the Cape and Islands region were water-oriented. The top five issues in rank-order of importance are:

- Development and expansion of ocean access
- Development and expansion of water-based recreation
- Maintenance of recreation facilities
- Acquisition and protection of wildlife habitat and
- Development and expansion of handicapped access

There were several other issues which also fit into the high priority category. These include the development and expansion of recreation facilities, acquisition and protection of cultural areas, development and expansion of trail corridors and increasing access opportunities to inland waterways.

Public Planning Preferences. Citizens within this region were divided in their preferences for funding which would be directed toward land-based or water-based facilities. They did, however, express a preference for spending more to maintain existing recreation and conservation areas rather than develop new ones. A higher preference was placed on spending for conservation areas than recreation areas and, finally, there was an indication that citizens within this region were significantly less aware of state areas than residents within other regions.

Table 7.10
Supply and Demand Analysis

Activity Group	Demand (act. uses)	Carrying Capacity (act. uses)	Need (S-D=Need) (act. uses) ¹	Deficit Surplus ²	Dis-satisfaction Index	Travel Barrier Index	Regional Need Rank
Resource-Based:							
Camping	733	22,020	21,287	96.7%	152.0%*	138.4%	6
Hiking	779	10,612	9,833	92.7%	0.0%*	146.3%*	8
Picnicking	5,609	55,380	49,771	89.9%	95.8%*	32.5%	9
Sports/Recreation:							
Field-Based Activities	4,707	10,200	5,493	53.9%	0.0%*	81.4%	7
Golf	13,269	12,552	-717	-5.7%	80.5%	49.9%	5
Tennis	18,924	8,602	-10,322	-120.0%	158.1%	116.7%	1
Water-Based:							
Boating	21,158	65,236	44,078	67.6%	12.4%	41.3%	11
Fishing	8,201	8,433	232	2.8%	61.7%	88.4%	4
Swimming	210,658	1,307,716	1,097,058	83.9%	57.1%	46.2%	10
Winter-Based:							
Downhill Skiing	12,264	0	-12,264	NA	142.2%	211.9%	NA
Ice-skating	1,875	1,775	-100	-5.6%	68.7%	152.8%	2
X-Country Skiing	8,460	10,612	2,152	20.3%	95.8%	150.8%	3

¹ Positive number indicates amount of surplus in activity uses; negative indicates amount of shortage per design day.
² Percentage is based on the proportion of current supply; positive percentage indicates surplus, negative indicates a deficit.
 * Sample too small (N<10) to yield meaningful results; presented for descriptive purposes only.

Summary and Recommendations. The influx of tourists onto the Cape and Islands each summer is a critical issue. The provision of water-based recreation, ocean access and the emphasis on conservation of the wildlife habitat and water supply require special planning attention for this fragile region.

Planning recommendations for the Cape and Islands region include:

- Market other regions in the state where winter recreation facilities are available
- Improve the opportunities for water-based recreation through development and expansion of facilities and increase access points to water
- Maintain a balance between acquisition and development of both recreation and conservation areas
- Involve state agencies in the movement to curtail development and implement protection programs
- Develop a marketing program aimed at improving the awareness of state-owned facilities throughout the state
- Improve maintenance of recreation facilities through the development of incentive programs

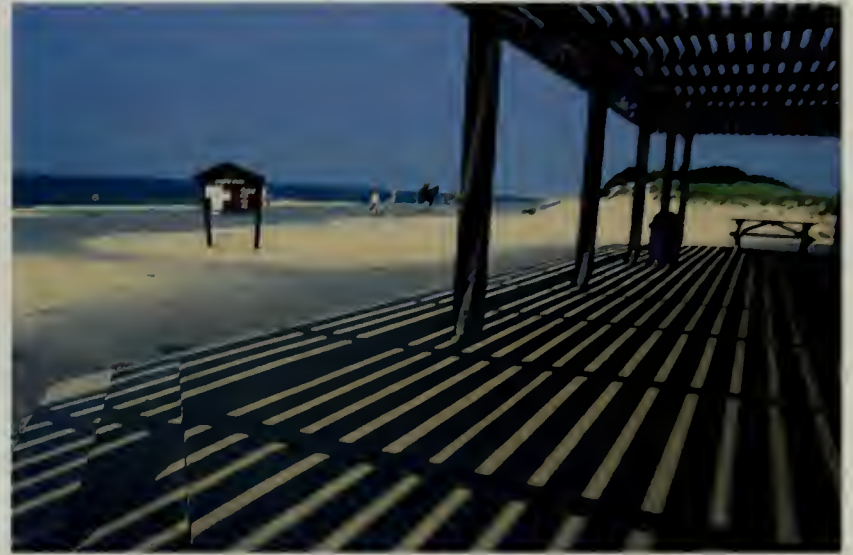
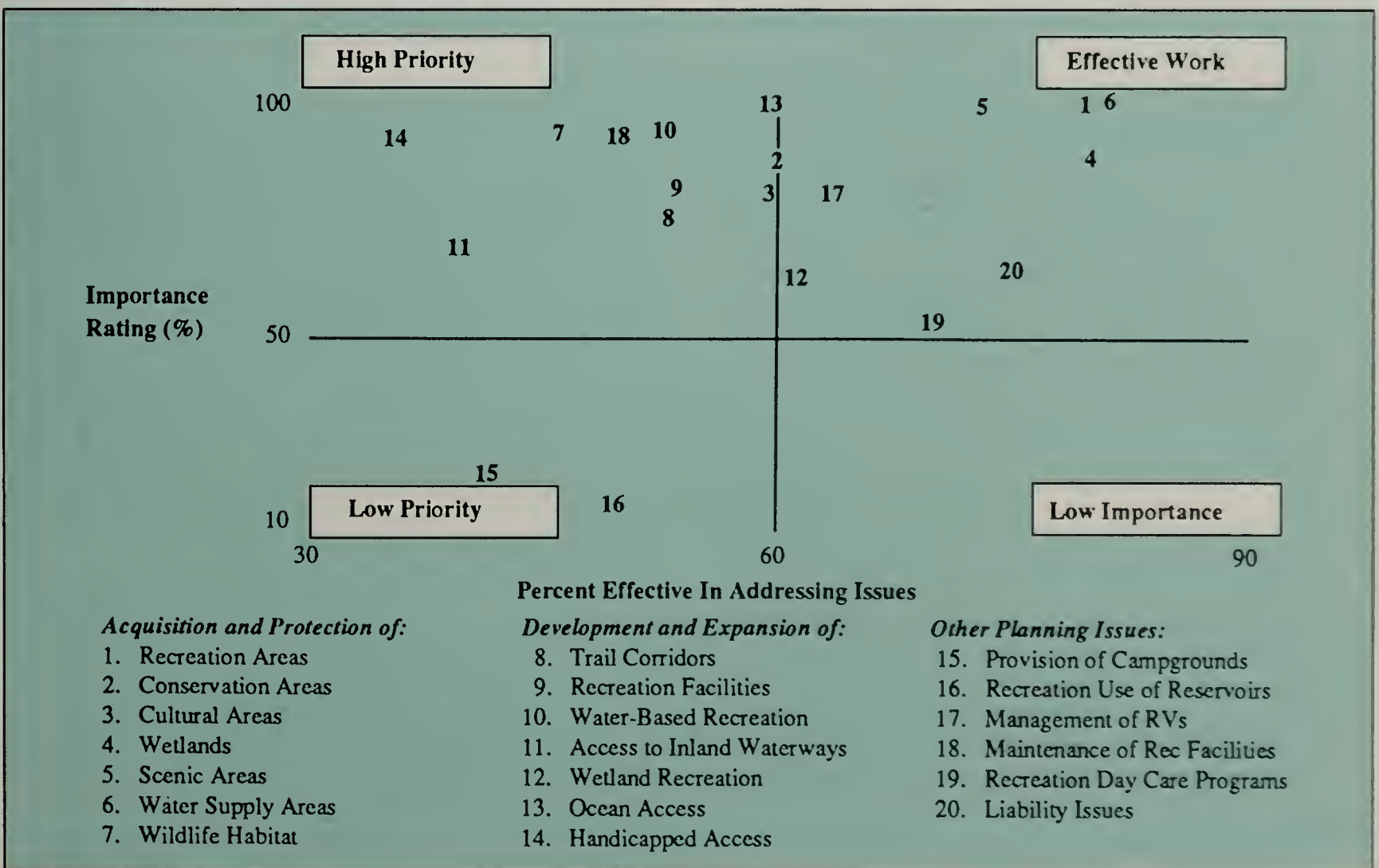


Photo by Susan Wilson

Figure 7.9
Importance of and Effectiveness in
Addressing Recreation and Conservation Issues



Summary - - Coming to Closure

This path has led us through municipalities, state outdoor recreation facilities and administrative offices, over privately owned lands and through a variety of data sets. We have heard from the general public, local and state governmental planners and administrators, those in the private nonprofit sector, and we have talked at length among ourselves. What are the most important themes that characterize the valuable outdoor recreation and conservation resources and programs of the Commonwealth? Can we now pull together what we have learned and assure that the sum of the parts is greater than the whole?

It is always risky to narrow the field of issues to those which seem to be the most critical because *all* issues are important to someone. Accordingly, various groups and individuals will identify patterns and formulate action plans that meet their particular needs within their own settings. Thus, in the following discussion, as we highlight those issues which seem to be especially noteworthy, it is with the understanding that these are generalizations for the state as a whole, and are not meant to apply in each and every situation. With this in mind, what patterns have become apparent?

Acquisition and Protection. The resources throughout the Commonwealth are exceptional. From the Berkshires to its sandy beaches on Cape Cod, the Commonwealth is rich in culture, history, wildlife, open spaces, farmlands and classic New England scenery. As population shifts take place, the development of second homes expands and development for other reasons takes place, natural resources become increasingly threatened. The legislature must continue to provide the financial support that is essential for the character of Massachusetts to be preserved. Funding must be provided in order to continue environmental protection and it must be made available to all communities, both cities and towns. Along all fronts of this study, it was clear that acquisition and protection efforts of conservation, cultural, scenic and recreational resources are of great importance to all of us.

Water Supply and Recreation. Water is one of our most precious resources. Massachusetts is somewhat limited in its number of publicly owned rivers, lakes, ponds and ocean beaches and many of these resources are endangered. Acid rain, ground water pollution, residential development, the destruction of wetlands and limited access diminish opportunities for everyone. A recent EOE study cites the loss of 62 lakes and 123 streams that are unable to support fish and other aquatic life due to acid rain contamination. If this trend continues, an additional 800 lakes and streams will be lost over the next forty years. Citizens of the Commonwealth are requesting greater access

to both ocean and inland waterways. Due to the ever-present popularity of swimming and fishing, and the growing participation in boating, the problem will only become worse if the issue of access is not addressed at all levels. This must remain a high-priority issue as we near the close of this century.

Recreation and Sports. The people of New England and Massachusetts have always been strong supporters of recreational and sports programs. It was not surprising to find these types of activities in high demand. However, we need to be concerned about the lack of supply, the high dissatisfaction among many residents, and the long travel times required to participate in recreation and sport activities. This is not a short-term problem. Our population is growing, is becoming better educated, more health-conscious and more affluent, all of which are strong predictors of higher participation in recreation and sports activities. Areas and facilities may need to be more diverse and flexible in their design and usage. They must serve a broad clientele and be able to be adaptable to changing demands and trends. At the same time, some of our communities still need the basics such as quality parks and recreation areas that are both accessible and within a reasonable distance for the majority of residents. Playgrounds, swimming areas, hiking and biking trails are all still in great demand.

Local Funding Support. The Commonwealth has developed many special funding programs (Urban Self-Help, Self Help, Town Commons, etc.) which have been instrumental in preserving and acquiring important resources within our cities and towns. But more is needed to help our cities and towns maintain and preserve existing resources. Rural communities across the Commonwealth are especially in need of help for acquisition and protection programs. Communities which are growing the fastest are hard-pressed to provide full-time administrators and resources planners. Foresight in targeting special action programs for recreation and conservation resource planning and management may help these high-growth communities retain their New England character. For these and other issues, efforts should be directed toward strengthening regional planning programs and facilitating cooperative ventures among our cities and towns.

Maintenance, Renovation and More Maintenance. At the local and state level, maintenance and renovation of facilities emerged as high priority issues. These issues will continued to be of high importance year after year, at site after site. The extent to which they are addressed will have a direct effect on the way managers feel about their sites, on the life span of facilities, and on the long-term use levels of sites. Funding for renovation and maintenance must be a normal part of all budgets, not on a sporadic basis, but year after year.



Photo by Susan Wilson

Multiple-Use Site Conflicts. Maintaining areas and facilities is sometimes made more difficult by the ways in which sites are used. Of particular concern is the multiple-use of sites by mechanized and non-mechanized recreators. Regardless of ownership, very few sites throughout the state have been set aside as designated areas for selected activities. Those who wish to motorcycle, snowmobile or use ATVs find that the opportunities are limited unless they utilize sites that are also used by hikers, cross-country skiers and those on horseback. In addition to the hazards that exist under these conditions, tensions are created. As a result, those, seeking non-mechanized recreation experiences, in particular, may avoid sites that could meet their needs if the conditions were not so stressful.

Many who participate in mechanized recreation activities belong to organized groups. At the least, members of those groups could be attracted to areas that have been set aside for their use thereby limiting some of the unauthorized uses of other sites. Resistance might be expressed initially; however, in time, the appropriate uses of different sites will be established and the character of each area will be solidly established. When there is too much diversity in the way in which an area is used, environmental protection and management problems are compounded, but once sites have been designated for particular uses and the policies regulating those uses have been established, managers will be in a position to focus on a narrower range of concerns which should increase their effectiveness and their abilities to better serve the public and strengthen environmental protection efforts.

Renovation of Facilities and Handicapped Access. Handicapped access is an issue of extreme importance to many people within the state. Increasing opportunities for access to sites, however, may be related to another problem which was also identified by the general public, state facility managers and municipal administrators - the need for renovating facilities. Renovation projects could focus not

only on restoring areas and facilities to meet standards that are acceptable to the state and to the general public, but could also incorporate design changes which would increase their accessibility. Funding for such change should be included as a matter of course each time renovation projects are proposed and approved.

Public Information and Education. The general public is not fully aware of the outdoor recreation and conservation opportunities that exist in Massachusetts. This was even evident in areas where abundant state facilities exist. Concern over this issue was also expressed by many state planners and facility managers who feel that opportunities should be promoted more extensively throughout the state. Carefully designed marketing plans which serve to promote, educate and protect the significant recreation, conservation, historical, cultural and scenic products or resources of the Commonwealth need to be developed. Solutions to some of these problems may be as simple as providing brochures and fliers at all state sites, but also at strategic locations across the state and within local communities. All promotional efforts should be carefully coordinated with the Department of Commerce's tourism campaign. Efforts need to be made to share the "Spirit of Massachusetts" with the residents of Massachusetts. Furthermore, the state should not carry the burden of promotional efforts on its own. Cooperative agreements need to be made with nonprofit and private agencies so that public education efforts are shared.

Promotion efforts should also specifically target out-of-state visitors. Computerized information stations and visitors centers should be used to their full advantage for promoting both state, regional and local recreation resources. These would not only be helpful to visitors from other states, but to residents of the Commonwealth, as well. The opportunities for strengthening promotional programs are virtually endless and should be continually explored by both state and local planners and administrators.

More importantly, perhaps, on-site programs should be developed in environmental interpretation and education for youngsters and adults alike. Family participation in these programs should be encouraged. Environmental, cultural and historical education will have long-range impacts on the attitudes and values of many participants and planning of such programs will clarify the strengths of each site, giving them definition, character, focus and value for management and our citizens.

Technical Assistance and Access to Information. Local and state administrators are requesting technical assistance from state planners. The expertise within the state system and among the Commonwealth's communities needs to be more fully shared and developed. Therefore, we recommend the development of a technical assistance program that unites state agencies and departments and provides direct assistance to local communities.



Photo by Paul Rezendes

We are in an information revolution today and our ability to capture the needed information to complete this plan is evidence of the progress made since the last detailed SCORP plan. To fully capitalize on the dramatic improvements in data collection that have taken place, the EOEA Data Center must be fully incorporated into the daily processing of recreation and conservation information. The flexibility and amount of information available is a veritable gold mine for state agencies and communities. Plans need to be developed which continue to update the large data sets which were collected during this study. Further analysis on many specific issues should now be addressed. State and local officials must be given opportunities to gain access to these data bases. Thanks to EOEA programmers and system experts, that possibility now exists.

Activating the Process

The results of this research make it apparent that planners, administrators and legislators throughout the Commonwealth have a great responsibility to the people of Massachusetts. They must preserve and protect, develop and maintain, formulate programs and deliver them, always in an effort to meet the needs of an incredibly diverse population. In the next chapter, a program will be presented which focuses on the policies and actions which will guide us into the nineties. The effectiveness of this and other documents and reports that have and will be formulated, depend largely on our ability to convert ideas and recommendations into actions. It is those actions that will allow us to preserve and protect as we are also able to enjoy . . .

Chapter Eight

Just the Beginning

*The earth and air are free to all the fruits
and flowers, yet each absorbs what best
ensures its growth.*

Elizabeth Cady Stanton



Coming Full Circle

Over the past eighteen months, the Executive Office of Environmental Affairs' Department of Environmental Management has been coordinating an extensive research and public participation effort to prepare a five-year open space and outdoor recreation plan. The process for developing the 1988 SCORP is the most comprehensive approach to date. It included an inventory of nearly 11,000 open space and outdoor recreation sites, surveying more than 3,500 residents, 351 cities and towns and 175 state facility managers. In addition, public meetings were held in every region of the state. During the course of the project over 400 recommendations were submitted from the general public, public and private agency professionals and from state and municipal officials. The policies and recommendations included in this chapter, and reflected in the Action Plan located in Volume Two, are a direct result of this input and the research presented in the preceding chapters.

In 1983, the SCORP Technical Advisory Committee and the agencies of EOEA developed and adopted a series of 26 policies to guide state environmental programs. After careful review, revision and expansion, these policies have been evaluated in light of current research and public participation to form a basis for the 28 policies and recommendations presented in this chapter. Each policy is followed by the letter High (H), Medium (M) or Low (L), reflecting priority levels for enhancing open space and outdoor recreation opportunities in the Commonwealth.

A word about priorities. Within EOEA there are several offices and departments which have very distinct mandates. Based on those legislative mandates, each agency has its own set of priorities which have been taken into consideration in this document. Furthermore, a number of action programs have been suggested which should be implemented over a two-year period, often in stages. These actions were developed by EOEA agencies as a direct result of the 1988 SCORP recommendations.

1988 Policies and Recommendations

Listed below are the policies and recommendations of the 1988 Statewide Comprehensive Open Space and Outdoor Recreation Plan as prepared and approved by the SCORP Technical Advisory Committee. Policies and recommendations were developed with consideration for other state initiatives, such as Agenda 90 and Blueprint 2000 and reflect similar issues and concerns. The recommendations are based on the Secretariat and its agencies as they are currently organized. Should the structure change, it is important that the content in any redistribution of agency responsibilities. Volume Two,



Photo by Susan Wilson

published under separate cover, includes the 1988-90 Action Plan listing individual agency actions which address the recommendations in this chapter.

Managing the Public Estate

The people of the Commonwealth have entrusted the efficient and effective management of land in public ownership to various state and local agencies.

Policy 1 - Coordination Among Land Managing and Land-Use Planning Agencies (H)

All agencies and political subdivisions of the Commonwealth having jurisdiction over public lands shall coordinate their work and communicate with land use planning agencies to reduce costs, avoid duplication and enhance effectiveness. It is recommended that:

- the Secretary of the Executive Office of Environmental Affairs increase efforts to enhance communication among the offices and agencies within EOEA and other land use planning agencies to fully address the policies and actions of the 1988 SCORP; and
- EOEA investigate methods for supporting regional planning by hosting a strategic planning meeting with regional planning organizations and municipalities.

Policy 2 - Public-Private Partnership (M)

All agencies and political subdivisions of the Commonwealth shall actively promote communication and coordination among federal, state and local agencies, private nonprofit organizations and the private sector to avoid duplication and enhance effectiveness. It is recommended that:

- EOEA agencies develop guidelines and procedures for enhancing public-private partnerships to address agency goals;
- EOEA and the Governor's Office of Economic Development meet to develop ways to encourage private innovation and investment in outdoor recreation and the preservation of natural and cultural resources;
- state agencies support local efforts to work with private developers to plan for environmentally sound development that includes open space and recreational amenities in capital projects; and
- EOEA agencies host an annual land stewardship conference for public and private land managers and environmentalists with a special emphasis on private-public relations, providing opportunities for partnerships to be developed as a direct result of the conference.

Policy 3 - Management Planning (M)

All agencies and political subdivisions of the Commonwealth shall prepare long-range management plans, with consideration for the physical, natural and cultural resources of all state properties with existing and future facilities. It is recommended that:

- EOEA continue its coordination efforts with land managing agencies. Out of this cooperative effort, agencies should agree on standard components to be included in all agency management plans; and
- EOEA agencies develop in-service training and management meetings to address the top issues related to staff and equipment problems. EOEA should monitor the outcome of these meetings and provide assistance and support for suggested change.

Policy 4 - Geographic Information System (GIS) (H)

All agencies and political subdivisions of the Commonwealth shall support the development and maintenance of a comprehensive computerized data base and geographic information system. It is recommended that:

- EOEA seek funding for establishing GIS capability within appropriate offices and agencies. This entails procurement of graphic terminals, communications capable of accessing the EOEA Data Center, digitizers, pen plotters and staff resources;

- EOEa agencies and offices should evaluate current GIS capabilities identifying areas where immediate action can be taken such as reassigning staff and standardizing data collection to be compatible with GIS; and
- EOEa seek federal funding to integrate SCORP inventory data into the state GIS. EOEa should develop a plan to maintain and update data providing a functional system to support state, regional and local planning efforts.

Urban Recreation

The people of the Commonwealth have entrusted the protection of resources and the provision of recreational opportunities for residents of urban areas to various state and local agencies.

Policy 5 - Acquisition, Development, Restoration, Preservation and Management of Urban Parks (M)

All agencies and political subdivisions of the Commonwealth shall promote the public and private acquisition, development, restoration, preservation, interpretation and management of natural and cultural resources and recreation facilities in urban areas. It is recommended that:

- EOEa, in cooperation with regional planning agencies, develop strategies for enhancing open space and recreational opportunities in urban areas. Emphasis should be placed on the protection of the water supply, protection of wetlands and the expansion of outdoor recreation facilities, specifically expanding trail corridors and placing high priority on the development of water-based recreation opportunities; and
- EOEa agencies support local efforts to meet the needs of less mobile people, who are often concentrated in urban areas. Specific attention should be given to helping communities make parks accessible to people with disabilities.

Policy 6 - Accessible Open Space (L)

All agencies and political subdivisions of the Commonwealth shall promote increased accessibility for urban residents to public open space, recreation facilities and natural and cultural resource amenities in suburban and rural areas. It is recommended that:

- EOEa seek funds to formulate a master plan for the development of urban and suburban bicycle routes; and
- EOEa agencies increase promotional efforts that advertise open space and recreation opportunities that are accessible by public transportation.

Policy 7 - Controlling Vandalism (M)

All agencies and political subdivisions of the Commonwealth shall support efforts to reduce vandalism by promoting proper maintenance levels, constructive use of parks and recreation areas, and respect for natural and cultural resources. It is recommended that:

- the legislature provide funding specifically for vandalism control programs at both the state and local level; and
- EOEa agencies develop "park ethics" programs to promote the positive use of parks, especially near urban areas. These programs should promote a sense of ownership among park users and provide the users with opportunities for involvement.

Assistance to Cities and Towns

The people of the Commonwealth have entrusted the state to give adequate support to cities and towns for the protection of natural and cultural resources and the provision of outdoor recreation opportunities.

Policy 8 - Technical Assistance (H)

All agencies of the Commonwealth shall provide technical assistance to cities and towns to help with their open space and recreation planning and management. It is recommended that:

- EOEa offices and agencies continue to provide the technical assistance currently offered to cities and towns and increase interagency communication to enhance effectiveness;
- the legislature fund a formal technical assistance program to accomplish the 1983 and 1988 SCORP recommendations and actions for providing technical assistance to cities and towns;
- the newly created technical assistance program assist communities who need to address specific areas of concern such as liability insurance and outdoor recreation day care programs;
- this technical assistance program work with municipalities to access SCORP data to be use in preparing open space plans; develop a lending library in cooperation with the Statehouse Library; and provide workshops on current issues of concern to municipalities; and
- the EOEa Data Center maintain the SCORP inventory and demand data and provide access to state, regional and local recreation and conservation planners.

Policy 9 - Funding Assistance to Cities and Towns (H)

All agencies of the Commonwealth shall provide expanded funding assistance to cities and towns for open space and recreation capital needs. It is recommended that:

- the legislature increase funding opportunities to communities for the acquisition of land in high growth communities and especially for the protection of the water supply and the development and renovation of recreation facilities; and
- EOEA agencies evaluate grant program point systems, amending them to give consideration for communities with higher growth rates and communities that are deficient in recreation and conservation resources.

Policy 10 - Maintenance Programs (H)

All agencies of the Commonwealth shall assist cities and towns in the development of efficient maintenance programs for conservation, parks and recreation areas. It is recommended that:

- EOEA agencies enhance communication with local parks and recreation professionals to share information about current trends and techniques for developing efficient and effective maintenance programs;
- EOEA agencies take the lead in identifying solutions to the management of off-road vehicles, offering technical assistance to cities and towns, especially rural and coastal communities which have expressed concern; and
- the legislature consider funding incentive maintenance programs which address vandalism and park ethics.

Natural Resource Conservation

The people of the Commonwealth have entrusted the protection and preservation of all significant natural resources to various state and local agencies.



Photo by Susan Wilson

Policy 11 - Environmental Law and Enforcement (H)

All agencies and political subdivisions of the Commonwealth shall seek to strengthen and strictly enforce environmental laws, regulations and policies. Outdoor recreation should be explicitly recognized as a beneficiary of clean air, clean water, scenic landscapes, waste free land and abundant and diverse wildlife. It is recommended that:

- EOEA offices and agencies increase efforts to investigate and support areas of law, regulation and policy that would enhance agencies' abilities to carry out their mandates, such as: laws protecting the drinking water supply, land bank legislation and liability reform;
- EOEA offices and agencies continue efforts to enhance environmental law enforcement especially in the areas of vandalism control, illegal dumping, RV use, protection of water supply and boating safety; and
- EOEA evaluate environmental laws pertaining to municipalities and their ability to protect the environment and provide recreation opportunities and seek to improve effectiveness wherever possible.

Policy 12 - Coastal Areas (H)

All agencies and political subdivisions of the Commonwealth shall practice and promote the protection of coastal areas and shall strive to make the ocean shoreline and appropriate immediate environs available, accessible and suitable for use and enjoyment by the public. It is recommended that:

- EOEA increase efforts to provide access to the shoreline, through legislation, acquisition, pollution control, rehabilitation of coastal facilities and the Waterways License and Permit Program (Chapter 91); and
- EOEA agencies actively pursue cooperative agreements to make coastal properties accessible through private landowner easements or other voluntary arrangements.

Policy 13 - Natural Habitats (M)

All agencies and political subdivisions of the Commonwealth shall practice and promote the protection of wildlife and wild plants to preserve the diversity and health of natural ecosystems. Special emphasis shall be given to the preservation and recovery of rare and endangered species and threatened ecosystems. It is recommended that:

- EOEA seek additional funding and pursue legislation that would enhance agency efforts to preserve and recover rare, endangered and threatened species and ecosystems;
- EOEA consider research initiatives which would enhance our knowledge of rare, endangered and threatened resources and enable state agencies to plan preventive programs; and

- EOEAs support research toward the nomination and designation of Representative Natural Areas (RNAs) in order to preserve and protect old growth woodlands and successional diversity.

Policy 14 - Forest Resources (M)

All agencies and political subdivisions of the Commonwealth shall practice and promote responsible public and private forest management. It is recommended that:

- EOEAs prepare forest management plans that promote the preservation, conservation and protection of areas with significant environmental values, such as wildlife habitat, aesthetics, wood products and other natural, cultural and recreational resources; and
- promotional efforts be increased to encourage private forest managers to prepare plans that will preserve, conserve and protect significant resources.

Policy 15 - Water Resources (H)

All agencies and political subdivisions of the Commonwealth shall practice and promote the protection, restoration, preservation and management of aquifers, rivers, lakes, ponds, wetlands and their watersheds. It is recommended that:

- EOEAs seek funding to expand all water-related agency programs, as well as water-related grant programs to cities and towns, agencies move immediately to evaluate and implement water-related programs and plan for future programs and projects that will protect water resources and provide recreation opportunities, and increase promotional efforts to involve the public in efforts to protect this precious resource;
- EOEAs evaluate law enforcement programs in the area of water pollution and develop strategies to address areas of critical need; and
- EOEAs evaluate the effectiveness of protective orders on rivers and develop strategies for enhancing efforts to protect riparian lands from poorly planned development, through additional protective orders, etc.

Policy 16 - Agricultural Lands (M)

All agencies and political subdivisions of the Commonwealth shall practice and promote the protection of prime agricultural soils and farmland. It is recommended that:

- EOEAs increase efforts to protect prime agricultural lands through local technical assistance and programs such as the Agricultural Preservation Restriction Program and the Farmland Stewardship Program; and
- the interagency Open Space Advisory Committee develop further strategies to protect EOEAs' agency-managed farmlands.



Photo by Paul Rezendes

Policy 17 - Geological Resources (L)

All agencies and political subdivisions of the Commonwealth shall practice and promote the protection of significant geological resources. It is recommended that:

- EOEAs develop strategies within their land acquisition programs that consider the protection of significant geological features.

Cultural Resource Preservation

The people of the Commonwealth have entrusted the protection of all significant cultural and historical resources and their interpretation to various state and local agencies. It is recommended that:

Policy 18 - Archaeological Resources (M)

All agencies and political subdivisions of the Commonwealth shall practice and promote the identification and protection of significant prehistoric and historic archaeological resources. It is recommended that:

- EOEAs evaluate all state agency cultural and historical programs and current funding levels, identifying program needs, recommending change and identifying areas for increased cooperative efforts, especially among state agencies such as the Massachusetts Historical Commission;
- EOEAs work with the Executive Office of Communities and Development to enhance municipal planning and subdivision legislation to include more consideration for significant cultural and historical resources;
- EOEAs increase efforts to promote state agency compliance with MGL Chapter 9, Section 26c, requiring agencies to review the impact of development on historic sites nominated or already on the register of state historic sites; and

- EOEAs seek funding to inventory, in cooperation with the state GIS, significant cultural resources on all state-owned land and require EOEAs to complete management plans for those sites.

Policy 19 - Landscape Features (M)

All agencies and political subdivisions of the Commonwealth shall practice and promote the protection of significant scenic and cultural landscape features as designated in the Massachusetts Landscape Inventory. It is recommended that:

- the legislature pass legislation and provide funding to begin the preservation of significant landscapes as designated by the Massachusetts Landscape Inventory;
- EOEAs work cooperatively to add this scenic landscape data and other significant landscape information to the SCORP inventory; and
- EOEAs work with Communities and Development to enhance municipal planning and subdivision legislation to include more consideration for significant landscape features.

Policy 20 - Architectural Resources (L)

All agencies and political subdivisions of the Commonwealth shall practice and promote the protection of historically significant buildings, structures and sites. This includes but is not limited to residential, institutional, commercial and industrial buildings and associated outbuildings and structures. It is recommended that:

- EOEAs increase efforts to protect significant buildings and structures threatened as a result of state activity; and
- the legislature consider funding to complete an inventory of all significant buildings and structures on publicly-owned land incorporating these data into the existing SCORP inventory.

Recreation Resource Protection and Use

The people of the Commonwealth have entrusted the protection of and appropriate public access to natural, cultural and recreational resources to various state and local agencies. This includes the acquisition of land; renovation, replacement or development of needed recreational facilities; and the provision of programs and services.

Policy 21 - Recreational Properties and Facilities (H)

All agencies and political subdivisions of the Commonwealth shall practice and promote the protection and appropriate public use of natural, cultural and



Photo by Susan Wilson

recreational resources, and shall provide for the renovation, replacement or development of properties and facilities necessary to ensure a safe and enjoyable educational and recreational experience. It is recommended that:

- EOEAs increase efforts to enhance properties and facilities that support coastal and inland water-related activities with particular emphasis upon swimming, boating, and fishing; trail-related activities such as hiking, cross-country skiing, bicycling; and camping;
- EOEAs seek cooperative ventures to enhance properties and facilities that support the following recreational sports: golf, tennis, ice hockey and a variety of field-based activities (i.e., softball, soccer, football, etc.);
- EOEAs increase efforts to promote the use of state-owned recreation facilities within the various minority communities; and
- EOEAs enhance maintenance and operations programs that promote *excellence*, which will assure *quality* recreation and conservation experiences.

Policy 22 - Recreational Programs and Services (H)

All agencies and political subdivisions of the Commonwealth shall practice and promote the stewardship of appropriate natural and cultural resources through the provision of recreational programs and services. It is recommended that:

- the legislature consider legislation to limit the financial liability of municipalities and private nonprofit organizations who own and operate recreation facilities and private land owners who open their property for public recreational use;
- EOEA agencies work closely with bicycle and trail organizations to increase recreational opportunities for both biking and hiking;
- EOEA agencies seek funding for programs and services for water-based and trail-based activities;
- EOEA agencies seek an increase in funding to support park interpretive programs;
- EOEA agencies increase recreational program opportunities for people with disabilities, enhance bilingual programming and seek to make publications and signs accessible to a variety of populations; and
- EOEA agencies promote recreational opportunities to in-state and out-of-state residents in conjunction with the Division of Tourism.

Access for People with Disabilities

The people of the Commonwealth have entrusted various state and local agencies with the responsibility of providing access to diverse recreation opportunities for people with disabilities.

Policy 23 - Elimination of Barriers (H)

All agencies and political subdivisions of the Commonwealth shall plan and provide for physical and programmatic access to recreation opportunities. It is recommended that:

- EOEA agencies hire, or designate within current staff, an Access Coordinator to prepare a master plan for facility and program access and attend to the policies and actions presented in the 1988 SCORP;
- EOEA agencies immediately establish advisory committees of people with disabilities, as recommended in 1983, to evaluate and recommend facility and program access improvements and assist in developing priorities for action. Special consideration should be given for access to swimming, trails, picnicking and fishing facilities;
- EOEA coordinate its agencies in establishing a clearinghouse for information on accessible recreation facilities and programs and develop methods for distributing information about recreation opportunities to people with disabilities;

- the legislature consider a grant program that would assist cities and towns in making programs and facilities accessible to people with disabilities; and
- EOEA agencies initiate discussions with the State Architectural Access Board for the purpose of reviewing, revising and expanding state standards for outdoor recreation facility accessibility.

Policy 24 - Staff Awareness (M)

All agencies and political subdivisions of the Commonwealth shall train all state park and recreation personnel to understand the capabilities and limitations of people with disabilities. It is recommended that:

- EOEA agencies develop annual training programs for park and recreation personnel that will increase sensitivity and awareness toward people with disabilities and present current information on issues affecting special populations; and
- EOEA and its agencies develop strategies for hiring more people with disabilities.

Public Awareness

The people of the Commonwealth have entrusted various state and local agencies with the responsibility to ensure that the residents of Massachusetts are well informed about recreational opportunities and natural and cultural resource protection issues.

Policy 25 - Public Information (H)

All agencies and political subdivisions of the Commonwealth shall increase the public's awareness of and appreciation for its natural, cultural and recreational resources. It is recommended that:

- the legislature fund a high quality quarterly environmental magazine which informs the public of EOEA activities, areas and facilities and promotes the mandate of the agencies;
- EOEA agencies actively promote public awareness, respect and appreciation for private property rights to enhance cooperative efforts for public use of private land;
- EOEA agencies develop promotional strategies which de-market over-used recreation areas and market under-used areas; and
- EOEA agencies develop strategies to promote state facility use among minority populations and increase efforts to hire minority program and facility managers.

Policy 26 - Public Education (H)

All agencies and political subdivisions of the Commonwealth shall foster a wider understanding of the importance of the protection and stewardship of natural and cultural resources and the care and respect for recreation facilities. It is recommended that:

- EOEAs explore the feasibility of establishing a division or office of Environmental Education and Information to develop and promote a statewide environmental education program;
- EOEAs initiate dialogue with the Board of Education to develop strategies for enhancing school-supported environmental education programs and for involving students in state agency programs;
- EOEAs support nonprofit environmental education programs through cosponsorship and other joint ventures; and
- EOEAs evaluate the interpretive needs of each new acquisition to ensure that proposed exhibits and publications, enhance and support the educational message of the site and are accessible to people with disabilities.

Implementation

The people of the Commonwealth have entrusted that the policies and recommendations of the 1988 SCORP will be implemented by various state and local agencies by seeking the necessary legislation, guidance and resources needed to accomplish the actions included in the 1988 SCORP Action Plan (see Volume Two).

Policy 27 - Resource Needs (H)

All agencies and political subdivisions of the Commonwealth shall request adequate resources to carry out their mandate and SCORP actions including staff, materials and equipment. It is recommended that:

- the legislature consider the establishment of an ongoing, consistent source of funding for land acquisition, facility development and rehabilitation for the protection and enhancement of natural, cultural and recreational resources;
- EOEAs seek increases in the annual budget for adequate staffing, equipment, public information, and handicapped access; and
- EOEAs develop strategies to increase and strengthen staff involvement and communication with management, seeking creative, cost effective solutions to management concerns.

Policy 28 - The SCORP Advisory Committee (H)

All agencies and political subdivisions of the Commonwealth shall continue to seek public involvement in the open space and recreation planning process. It is recommended that:

- the SCORP Technical Advisory Committee develop strategies to increase public participation in the open space and recreation planning process;
- the TAC prepare an annual report to the Secretary of Environmental Affairs on the implementation of SCORP policies and actions; and
- the Secretary of Environmental Affairs evaluate the effectiveness of the TAC, and become actively involved in the appointment of members to the committee.

Affording Open Space and Outdoor Recreation

Since the last SCORP, there has been a surge of public support to invest in environmental, open space and outdoor recreation programs. Such enthusiastic backing has led to major successes in securing funds, both from the public and private sectors. These successes have demonstrated a renewed commitment to increasing and improving open spaces and recreation opportunities in an environmentally sound Commonwealth. Still, in 1988 the question of continued funding to accomplish these recommendations is as critical as it was at the time of the 1983 SCORP. While it is clear now that people want to spend money to protect open space and recreation, it is not clear that open space and outdoor recreation programs can continue to rely on large bond authorizations. The solution will depend on creative financing and working together to reduce costs.

Accepting that funding is critical to achieving SCORP goals and objectives, the Technical Advisory Committee set out to establish a series of recommendations that will help establish a long-term investment plan for open space and recreation opportunities. The committee's approach included a review of budget expenditures and revenues related to state environmental programs, methods for



Photo by Mark Finnen



Photo by Susan Wilson

reducing costs and increasing revenues, and how to plan for a stable financial future.

The Costs of Recreation and Conservation

The committee reviewed federal, state and nonprofit patterns of funding conservation and recreation programs in Massachusetts. Private vendors of recreation services were not included in this review; however, the committee has recommended their inclusion in future comprehensive planning efforts since they play such a vital role in protecting resources and providing services.

Cost Per User Rises. As we have seen throughout this report the demand for open space and outdoor recreation opportunities has steadily increased as have costs per user. In Massachusetts, since the mid 1970's, the average cost per user increased from \$0.99 to \$1.44, while the net operating cost per user has doubled, going from \$0.47 to \$0.97. Needless to say, open space and recreational services are expensive, and require substantial funding. Due to the dramatic rise in market land values in the Commonwealth, large scale funding plans are absolutely essential if land acquisitions are to keep pace with our expressed long-range goals. Costs are also steadily mounting for renovation and maintenance of existing facilities, many of which have suffered from insufficient funding in the past. As we all mourn the loss of our favorite fishing hole or quiet walkway in the woods, we need to remember this simple fact: the need to protect open space has never been more apparent or more expensive; but, the cost for acquiring new lands will never again be as *inexpensive* as it is today.

The Liability Issue. Another very "contemporary" expense, of course, centers around the current liability insurance crisis. As the dollar figure for damages awarded skyrockets, so have liability premiums. Although state forests and parks are self-insured, which avoids large expenditures for liability insurance premiums, there is the

pressure of knowing that the potential for costly lawsuits is ever-present. Unfortunately, many agencies and organizations, particularly at the municipal level, have "solved" this problem by closing down some of their sites and activities altogether.

Source of Funding

The subcommittee found that the burden of financing open space and recreation programs has shifted from a shared responsibility with the federal government to state and local agencies. Federal programs that once contributed are no longer in existence. The financial burden on municipalities has been further complicated by the passage of Proposition 2 1/2, as discussed in Chapter Four.

Hopeful Prospects. Although the outlook may seem gloomy, a recent flurry of activity at the national level offers hope of a renewed effort to share the responsibilities of protecting the environment and providing important recreation opportunities. The President's Commission on Americans Outdoors has made far-reaching recommendations that go beyond the constraints of the LWCF. Since the Commission concluded its work, the LWCF has been reauthorized and a variety of bills have been introduced to Congress to establish a more stable source of federal funding.

Other Federal Assistance. In addition to the Land and Water Conservation Fund, other sources of federal funds are available. These include the Pittman-Robertson Wildlife Restoration Fund and the Dingell-Johnson Sport Fish Restoration Fund which aid states in various conservation programs related to wildlife restoration and sport fish restoration. The revenues for these funds are derived from hunting and fishing equipment taxes. The tax is assessed on items directly linked to a particular outdoor sport.

In 1986, Massachusetts received approximately one million dollars each from the Wildlife Restoration Fund and the Sport Fish Restoration Fund. The money from these funds provided up to 70 percent of the funds required for any one program in the Department of Fisheries, Wildlife and Environmental Law Enforcement. Although this support has proven beneficial in protecting our wildlife and marine life, it is still insufficient to meet program needs.

Massachusetts Funding for Recreation and Conservation. The state legislature funds recreation and conservation programs through both operating and capital budgets. The operating funds pay to operate and maintain state owned properties and facilities as well as to maintain certain existing state programs. Capital funds are used to acquire new lands; restore, rehabilitate and build new facilities; and initiate new programs.



Photo by Susan Wilson

Until 1985 the legislature maintained a separate fund called the State Restoration Areas Fund which derived its revenues from assessments on cities and towns and from fees charged at state forests and parks. In 1985, however, the legislature discarded this fund. Presently, all operating costs are paid from the General Fund, which contains all state revenues. Since the dissolution of the state Recreation Areas Fund, the Commonwealth has issued general obligation bonds for open space acquisition and enhancement.

The Non-Game Fund was created to help support non-game wildlife research and acquisition projects through a voluntary tax check-off program. The check off, located on each Massachusetts resident's income tax form, generates some \$300,000 per year.

Finally, the Inland Game Fund provides for the protection and restoration of inland game species. This fund receives revenue from hunting and fishing fees, as well as from a portion of the water craft motor fuel tax, and accrues approximately \$6 million each year.

Nonprofit Revenue. Nonprofit organizations play a major role in the protection of resources and the provision of services. To assess this contribution, the committee

surveyed some of the major state nonprofit organizations regarding their revenues and expenditures for FY 1986. It is significant to note that of the nonprofit organizations surveyed, capital expenditures exceeded \$9 million, while operational expenditures pushed close to \$5 million. Many of these expenditures contribute directly to enhancing our environmental resources. Fortunately, through endowments, membership fees, contributions and other revenue sources these organizations were able to raise more than \$18.5 million, allowing them to continue their indispensable accomplishments.

Conserving Financial Resources

One historic method for stretching financial resources is the increased use of volunteers. Experience suggests, however, that volunteer programs only work if there is sufficient staff to support their activities. State programs like Adopt-a-Trail, Adopt-a-Stream and Adopt-An-Open Space are excellent working examples of the potential use of volunteers.

A second technique for reducing costs is strengthening public-private partnerships. This can range from granting subcontracts and concessions to the state working more closely with nonprofit groups in the areas of planning, protection and delivery of needed services.

The cost of liability insurance premiums and damage awards continues to grow throughout the nation and was identified as a major concern in both the municipal and managers surveys. Elsewhere, planners and legislators in the state of Michigan addressed this issue by initiating a far-reaching Risk Management Program, which has already greatly curtailed that state's liability-related costs. Other states have attacked this liability problem through legislative action that has redefined the impacts of "common " and "gross/wanton " negligence for state and municipal employees. These efforts have effectively curtailed the number of lawsuits in these states.

There are many ways in which agencies can reduce costs and still provide high-quality leisure services. Park designs that reduce labor and vandalism can be selected, volunteers can supplement staff efforts throughout the state and property owners can be encouraged to allow their lands to be used for recreation and conservation purposes. Dedicated funds, bond authorizations, endowments, revolving trusts and loans, and multi-level investments offer diverse funding options on many levels that can accompany cost-cutting measures. EOEa and its agencies should actively explore these and other options.

From state to state, of course, revenue sources vary. Oregon, for example, dedicates 1% of its highway tax to the development and maintenance of bikeways. In Colorado,

state and local parks receive a share of the state's lottery fund. In a variety of other states, oil and gas leases and a real estate transfer tax contribute to recreation and conservation expenditures. In eleven different states revenue from impact fees and development taxes have provided direct benefits to developing communities.

Future Funding Recommendations

Funding recommendations cannot be implemented haphazardly. Any attempt to change and implement new ideas must flow from a well-orchestrated, comprehensive financial planning strategy. Many of the programs and ideas are already underway, or have been addressed in the past. The key to a successful change will be our ability to study the current situation, based on the current SCORP research findings, then modify or introduce new programs that make sense for Massachusetts.

Reduce Costs

The following briefly suggests directions for exploring cost-cutting approaches which should be evaluated by both state and local planners. They are far from all-inclusive; thus, continuous dialogues should be undertaken to generate other effective programs.

Program Efficiency. EOEAs should evaluate statewide programs in terms of their operations and maintenance effectiveness. New systems should be explored that consider centralizing data bases, uses of on-line computers, upgrading preventive maintenance efforts, as well as inventory programs. High-tech opportunities exist and should be evaluated in the context of costs and benefits.

Risk Management Program. Following a comprehensive review of state and local liability concerns, the state should consider a risk management program which emphasizes employee and participant safety. Legislation should be considered clarifying and redefining the role of government employees as well as the conditions under which acts are defined as negligent in recreation, park and conservation settings. This should include the development of a "Participant Bill of Rights and Responsibilities" for all high risk activities. This could be modeled after similar private sector efforts to reduce liability.

Volunteer Programs. The legislature should continue to support and develop volunteer programs that assist park maintenance and provide program services. In addition, EOEAs should investigate other volunteer programs such as Wisconsin's Outdoor Corps and New York's Live From Central Park program (Learning and Involvement for Volunteers in the Environment), for possible applications in Massachusetts.

Federal Trust Fund. If the Land and Water Conservation Fund is succeeded by a dedicated trust, it would provide \$1 billion per year to help pay for federal, state and local land acquisition, facility development and rehabilitation. All state agencies, the legislature and nonprofit groups should consider supporting the creation of this fund for conservation and recreation purposes. A coordinated effort should be developed to demonstrate the Commonwealth's support for this fund which will be reintroduced to Congress in 1989.

Increase Revenues

Fees. EOEAs should review any increases in the use of fees and charges. Not all users have an equal ability to pay for services although all share equally in the public trust. In light of this, the state should consider a voucher or tiered system to assist those who cannot afford such experiences.

The possibility of a reservation service for state camping areas should also be considered. Additional revenues could be generated by levying a \$3.00 fee for all confirmed reservations. Under this plan, it is suggested that reservations be permitted for no more than half the campsites provided at a given state facility.

Dedicated Trust Fund. The Massachusetts legislature should seriously consider and initiate the formation of a state dedicated trust, similar to the national fund proposed by the President's Commission. It should be funded from a consistent, reliable source in order to secure a long-term open space and outdoor recreation plan. Interest generated by the trust should be reserved exclusively for conservation and the preservation of our natural and cultural resources and the provision of outdoor recreation opportunities.

Land Transfer Tax. The Massachusetts Legislature should develop a statewide land transfer tax, which would apply to all property transfers across the state. The proposal could include exemptions for targeted groups, including first-time home buyers, small sales, inholdings, etc.

Impact Fees. The legislature should investigate the use of impact fees used in other states, which could be used in Massachusetts to enhance environmental protection where development is occurring.

Creative Financing. EOEAs and the legislature should examine use of the Sikes Act and other federal programs and provide tax incentives for private land owners who protect resources and provide easements. The Outdoor Advertising Division should investigate a billboard advertising and construction tax dedicated to the environmental enhancement of roadways. The use of a recreation equipment tax should also be considered.



Photo by Rodney Brown

The Final Steps - - -Making it Happen

The policies and recommendations presented in this chapter can become realities, but at obvious cost. Funding sources that are generally available to us will continue to be of enormous help but they will need to be supplemented. By combining programs, and developing new, creative ones, we will continue to work together to provide high quality programs and services as we move ahead into a new decade.

Conclusion

Comprehensive plans, research, and recommendations do not protect our resources or provide recreational opportunities - - people do. Throughout the 1988 SCORP process it was apparent that many people of the Commonwealth are involved in this quest and are willing to work together to accomplish this end. This report reflects current efforts and outlines areas needing additional attention, with the knowledge that comprehensive planning can provide people with needed tools for accomplishing their goals.

The intent of the SCORP Technical Advisory Committee was to get to know the people of Massachusetts who can

make the plan work and understand the critical issues they face, offering recommendations and a two-year plan of action. It was important for committee members to provide not only a plan, but tools to help planners and managers attain their goals. This objective was achieved through the Volume Two Workbook section which presents the 1988-90 Action Plan and a variety of informative pieces for state and local planners and managers.

Finally the success of the SCORP planning document may ultimately be judged by individuals who are inspired to undertake initiatives and responsibilities for protecting and conserving our open space and recreation resources. While this concludes the written plan, it is just the beginning for the actions which will make it a reality. The special New England landscape and the unique quality of life that we so treasure, requires that we all be committed to ensuring its existence for future generations.

We end this report and plan
by applauding the dedication of the people
we met throughout the planning process
and encouraging your continued involvement . . .

For Our Common Good

Appendix

Expressing Our Thanks

*The future is not a result of choices
among alternative paths offered by the
present, but a place that is created first in
mind and will, created next in activity.*

Unknown



With Special Thanks...

from the Executive Office of Environmental Affairs and, indeed, from the people of the Commonwealth of Massachusetts

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No single person, committee or department could ever have assembled a report of this breadth or depth. Instead, a coalition of women and men dedicated to the preservation of our natural and cultural heritage worked for more than a year to create this document — and to help define a vision, a goal, and a practicable method.

Comprehensive long-term planning is a difficult task at best. Protecting our resources and providing recreation opportunities for a richly varied population requires constant communication, coordination and — perhaps most important — care.

Herewith is a partial listing of those who cared, and whose generous contributions of ideas, ideals and plain old hard work made possible this Statewide Comprehensive Open Space and Outdoor Recreation Plan.

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*Find the spirit inside
Find the spirit on a mountainside
Find the spirit in a rushing tide
Find the spirit in your heart*

Sandra Washington
Understated



Photo by Paul Rezendes

**Michael S. Dukakis, Governor
The Commonwealth of Massachusetts**